AMERICAN JOURNAL of VETERINARY MEDICINE

PUBLISHED MONTHLY. Copyright 1912 by D. M. CAMPBELL, CHICAGO, U. S. A.

Vol. VII AUGUST, 1912 No. 8

Jöhné's Disease*

By BRENNAN DEVINE, F. R. C. V. S., D. V. S. M., Birmingham, England

IT may in the beginning be interesting to note the different names under which the disease has been described. Like many other newly-discovered diseases, each investigator has adopted that term which he thought most descriptive of or suitable for the disease. The following are the principal names under which the disease has been described: Chronic enteritis, chronic bacterial dysentery, chronic bacillary enteritis, pseudotuberculous enteritis, infectious enteritis of cattle, specific chronic enteritis of cattle, diffuse hypertrophied enteritis of cattle, chronic bovine tuberculous enteritis.

Most of these names are not sufficiently distinctive for the disease, as there are many forms of enteritis in cattle due to causes other than Jöhné's bacillus; whilst those titles which include the word "tuberculous" are apt to be misleading, as it suggests it is a form of bovine tuberculosis. Sir John McFadyean has suggested that it should be known as Jöhné's disease, and under this name it is now generally known in the English-speaking world. This name is a short, unmistakable one, not likely to be confounded with any other disease, and at the same time it pays to Jöhné, the discoverer, that appreciation and recognition of his work which he so richly deserves.

History and Distribution

In 1881 Hansen and Neilson each described cases of chronic enteritis occurring in cattle in Holland. They pointed out that the intestinal mucous membrane was hypertrophied and thrown up into folds. The contagious character of the disease was at that time suspected, but it was not until 1895 when Jöhné and Frothingham discovered the causal organism that its contagious character was proved. Jöhné found in the intestinal mucous membrane of affected cattle acid-fast bacilli, microscopically indistinguishable from the tubercle bacilli. Jöhné and Frothingham at that time considered the disease a form of tuberculosis. Following their discovery, the disease does not appear to have been recognized until eight years later, when Markus, in 1903, described cases occurring in Holland. Since that time the disease has been seen and described by Bang in Denmark, Van der Sluys in Holland, Lienaux and Van den Eeckhout in Belgium, McFadyean and Stockman in England, Borgeand in Switzerland, Bongert and Meissner in Germany, Matthis and Leclainche in France, Pearson and Mohler in America, Horne in Norway, etc. From the above list we see that the disease is present in many countries, more particularly in the north European countries. The non-recognition of the disease in other countries is probably because bovine diseases have not been so actively investigated there. No doubt, as the disease becomes better known, it will be recognized in other parts of the globe.

As the disease in its early stages is such an insidious one and not generally known,

*Reprinted from the *Veterinary News*, London, England.

it would be difficult at the present date to fix approximately the percentage of cattle affected in this country. I believe the disease is much more prevalent than many of us suspect. I have seen as many as four cases in one day at the Birmingham slaughter-houses. While Jersey cattle hold the reputation of being free from tuberculosis in Jersey, many of them are said to be subjects of Jöhné's disease. There is no doubt the disease is prevalent in many parts of the United Kingdom.

The Causal Organism

Jöhné's disease is caused by an acid-fast bacillus microscopically indistinguishable from the tubercle bacillus. In affected animals the bacilli are found in the intestinal mucous membrane, and in the mesenteric lymphatic glands and their ducts. Morphologically and in staining reaction, the bacillus closely resembles the tubercle bacillus of the bovine type. It is non-motile, aerobic, and non-sporing. Its average length is one to two microns, and occasionally some may be found measuring up to four microns. The bacilli are slender, straight rods, and are usually seen in clumps. Some of them may be found slightly curved, especially those on the outer edges of a clump. The clumping of the bacilli is characteristic, and is of importance from a diagnostic point of view.

According to McFadyean, some of the longer bacilli show alternating staining, while the shorter forms stain uniformly. It stains best by the Ziehl-Neelson stain, but will also stain by the Gram. It does not stain well with the aqueous solutions of the aniline dyes. The bacillus will live for a considerable time outside the animal's body. According to Twort, cultures may be kept under anaerobic conditions for three months, and will afterwards develop, if placed in a suitable medium and temperature.

Cultural Characteristics

Many unsuccessful attempts have been made to cultivate the bacillus artificially outside the bodies of bovines. Messrs. Twort and Ingram, working in collaboration at the Brown Institution Laboratories, have succeeded in cultivating the bacillus on a special medium. The growth occurs between 28° C. and 43° C., or perhaps a little beyond these limits, the optimum being about 39° C., but it is always slow.

The reaction of the medium should be distinctly alkaline. The degree of alkalinity possessed by new-laid eggs is very suitable, and if this is in any way lessened in the medium, there is a marked diminution in the rapidity and the amount of the growth, as has been stated, no growth occurs on any of the artificial media in general bacteriological use, such as peptone, bouillon, agar, gelatine, serum, potato or egg, even when such substances as glycerin, sugars, amino acids, fresh blood, etc., are added. It is absolutely essential that certain previously detailed bacteria or extracts from them be added to one or other of the media before any growth of Jöhné's bacillus takes place.

Of the bacilli tested, undoubtedly the most suitable for adding to the media is the Timothy-Grass bacillus. Certain strains of human bacilli are also very good. On the egg-Timothy-Grass-bacillus medium Jöhné's bacillus when taken from the animal body will grow as tiny discrete colonies, which usually become visible in three to five weeks.

At first the colonies are round, smooth and dull stone white, they are slightly heaped up, and as growth increases this becomes more marked, while the color turns to a dull light yellow. Later the colonies may coalesce and the growth show some wrinkling, while the color may turn to a light yellowish brown. If the first culture taken from the diseased tissue is subcultured on to a fresh tube of medium, visible growth occurs on this in a few days, and may reach its maximum in two months instead of three. When inoculated into fluid media containing a suitable bacillus or bacillary extract, such as ordinary glycerin, peptone, bouillon, made alkaline, and containing one-half of one percent. of alcoholic extract of the Timothy-Grass bacillus, Jöhné's bacillus grows as tiny whitish grains, which settle to the bottom of the tubes or flask. These gradually in-

crease in size and number, ultimately reaching the size of a millet seed. Cultures are not easily killed by diffused daylight, as we have had them standing before a window on a bench for some weeks without any apparent harm. Jöhné's bacillus would also appear to be fairly resistant to the action of disinfectants, since two of our strains were isolated from material which had been subjected to the action of a one-percent watery solution of creolin at 37° C. for two hours. In this respect it is no less resistant than the tubercle and lepra bacilli.

Susceptible Animals

Jöhné's disease chiefly attacks cattle, and it is most common in animals from three to six years old. It is rarely seen in calves. Sir John McFadyean, in 1907, reports having met on postmortem a case in a deer. It is important also to note that sheep are not immune. Mr. Stockman has met with cases of Jöhné's disease in that animal, but the lesions found in the sheep are not so pronounced as those found in the bovines. The fact that both sheep and deer are capable of contracting the disease points to their being possible factors in its spread. Hence, they must necessarily be taken into consideration when instituting prophylactic measures.

Attempts have been made by several investigators to artificially inoculate the disease into other animals without result. Bang attempted to inoculate guinea-pigs, rabbits and goats. Meissner, in addition to these animals, has tried mice, but all have proved negative. Lienaux, of Brussels, in a paper on the subject delivered at the Ninth International Veterinary Congress held at the Hague, 1909, claimed to have been successful in conveying the disease to guinea-pigs; but Lienaux's results have not, so far as I am aware, been confirmed, and the view is now held that the disease which Lienaux's experimental animals contracted was avian tuberculosis.

Period of Incubation

After the entrance of the virus into the body of a healthy animal, some considerable time elapses before any noticeable symptoms in the animal are apparent. The development of Jöhné's disease is as a rule slow, and naturally depends to a certain extent upon the age, environments, strength and vitality of the animal. The presence of any debilitating disease would naturally tend to shorten the incubative period.

Bang inoculated a calf by feeding with infected material. This animal showed signs of diarrhea eight months later. This is the shortest period I have seen recorded in which the disease developed after inoculation. In most cases the animals do not exhibit any clinical symptoms before eleven or twelve months after inoculation.

The disease develops more quickly in animals at grass than in those which are constantly housed. This may be explained by the latter being usually fed on a more concentrated and better diet than grass, thereby keeping up the tone of the system.

The long period of incubation would seem to indicate that the disease runs a subacute course, and that clinical symptoms are not developed for a long time unless some complicated illness or other condition arises, such as pregnancy, and this gives the organism a chance to develop at an earlier date. Generally speaking, the incubative period may be placed at from eight to twelve months.

Spread of the Disease

The causal organism is found only in the alimentary canal in affected animals. It has never been detected in the respiratory tract, and is not found in the milk or urine. The feces must therefore be regarded as the medium by which the disease is spread. Animals may be inoculated by intravenous or intra-peritoneal injection of the virus, as well as by feeding on infected material. One must conclude that the mouth is the port by which the virus naturally gains entrance to the body. If the feces of an animal contaminates the water, grass or other foodstuffs, non-affected animals will contract the disease from it.

Symptoms

As a rule, affected animals are from three years old and upwards, though it is occasionally seen in animals as young as twelve

months. The commonest symptom is a progressive anemia and emaciation. Diarrhea is frequently present, though this is not constant. In affected animals the diarrhea is intermittent, coming on at irregular periods.

Although diarrhea is present in the majority of cases, it is possible for an animal to be affected with Jöhné's disease for a long time without showing any symptoms of diarrhea. Bang records a case of a cow which had died from the disease, yet she had never shown any diarrheic symptoms. Mr. Ingram, M.R.C.V.S., late of the Brown Institution, first drew my attention to the intermittent character of diarrhea in Jöhné's disease. Since then I have observed this intermittency in three affected animals, their feces at certain periods being normal in consistency, and at other times diarrheic.

Affected animals exhibit no febrile symptoms, such as elevation of temperature, cold ears, etc. During the periods when the diarrhea is present there is a sudden diminution in the milk secretion and a great loss of flesh, and with each attack the animal gets gradually weaker. Each succeeding attack of diarrhea occupies a longer period than the preceding one. The attacks of diarrhea do not seem to be amenable to any form of drug treatment.

In animals kept at grass the periods of diarrhea are of a long duration; in fact, the animal becomes so weak and poor that it is usually considered a "waster" and knackered. In housed animals that are well cared for the diarrhea does not seem to persist for long periods, though each attack leaves the animal poorer and weaker than before.

I was permitted to examine at the Brown Institution, London, a Jersey bull affected with Jöhné's disease. This animal, I was informed, had passed through various periods of diarrhea, but at the time I examined him the feces were fairly stiff, though I noticed they contained an appreciable amount of undigested foodstuff. This animal was anemic and emaciated, the temperature of its ears and horns was normal, the coat was dull and slightly staring, the visible mucous membranes were very pale, and the eye appeared clear and bright, but slightly sunken. The animal generally had a thin, wasted appearance. Three days later I met another case in a cow at Birmingham Cattle Market. This cow exhibited similar symptoms to the Jersey bull, but in addition the animal was lame in both hind feet and was blowing very badly, respirations being seventy-three per minute. The cow was slaughtered the same day, and I had an opportunity of making a postmortem examination. The lesions which I found I will describe later.

The clinical symptoms of Jöhné's disease frequently develop after pregnancy, and in the majority of cases its presence is not even suspected until the diarrhea and emaciation are ushered in. Even then one cannot always rely on these symptoms in order to be certain if it is Jöhné's disease we are dealing with.

Lesions

The lesions found on postmortem examination are confined to the bowels, the mesemteric lymphatic glands and vessels. The mucous membrane of the intestines is very much thickened and thrown up into folds, producing a very striking corrugated appearance on the lining of the bowels.

Being under the necessity of condensing into the small space of a paper, I cannot give in detail the results of many postmortem examinations which I have carried out on animals affected with Jöhné's disease. In most cases which I have seen on autopsy, the mucous membrane of the affected portions of the bowel in the fresh condition showed diffused areas of a pinkish or slightly congested appearance. The surface of the mucous membrane is covered with a peculiar greyish-yellow, thin, jelly-like material. This yellow, slimy substance can easily be scraped off.

If one spreads a portion of the bowel out and slightly stretches it, the branches of the lymphatic vessels appear thickened and cord-like and show up clearly through the mucous membrane. Previous to the disease being so well known as it is at present, it was frequently mistaken for

tuberculosis, and most investigators when describing it made a special point of the absence in the bowels of anything of the nature of ulceration, which is frequently seen in true tuberculosis of the bowels.

I mention this point specially, because I have a specimen of bowel here today taken from a cow affected with Jöhné's disease with what appeared to me to be beginning ulceration. Early last month I made a postmortem examination on a cow, which I have already mentioned was in Birmingham Cattle Market. In this animal the heart, lungs, liver, spleen, and kidneys, appeared to be normal, the mucous membrane of the small and large intestines showed hypertrophy and corrugation, but this was most marked in the large bowel. In addition, I also found at three different points in the bowels (two in the cecum and one in the colon) what appeared to be a form of ulceration. Each lesion was a small tumor or swelling in the mucous membrane. The highest point of each one in the lumen of the bowel was congested and the centre of the congested area necrotic. I had already seen this in one former case of Jöhné's disease, but not nearly so well marked as in this one.

Of course, these necrotic lesions may only be complications occurring coincidently with the Jöhné's lesions. The mucous coat of the intestines is the only one which seems to be involved in Jöhné's disease. This coat is hypertrophied sometimes to four times its normal thickness. The membrane becomes so expanded, without a similar expansion taking place in the muscular coat of the bowel, that the mucous coat is necessarily thrown into the characteristic folds which we see on opening the bowels.

The lymphatic vessels and mesenteric lymphatic glands are also swollen; the glands on palpation are softer than normal, and on section are moister; on section the mucous membrane appears to be filled with thick serum; on sections of the bowels examined microscopically the villi on the mucous membrane appear altered; they are irregular in shape and thickened. Epithelioid cells are lodged in the tissues round the villi and in the mesenteric lymphatic glands and their ducts. These epithelioid cells are very large and have acid-fast bacilli in their interior. The bacilli are not isolated, but are found in masses clumped together.

Very rarely do you find Jöhné's disease and tuberculosis in the same animal. I have seen only one such case during the past three months. I have made a thorough search for tuberculosis during the past three months in all cases of Jöhné's disease which I have had an opportunity of examining on postmortem (thirteen in all), and not in one have I succeeded in detecting any traces of tuberculosis. If an animal affected with Jöhné's disease is slaughtered during diarrhea and a scraping from the bowel is examined microscopically, enormous numbers of acid-fast bacilli will be found; but if the animal had not recently been affected with diarrhea previous to the examination, the bacilli may be rather sparse and difficult to find. Indeed, in some cases it may be necessary to examine scrapings from several different portions of the bowel. This may occur in cases which macroscopically seem very pronounced.

Diagnosis

The early diagnosis of Jöhné's disease, as of other specific contagious diseases, is important from a prophylactic point of view. By recognizing the disease in a herd at an early stage one has a better opportunity of preventing its spread and more quickly and economically eradicating it. We are all well aware that bovines are the subjects of other forms of diarrhea and wasting than that seen in Jöhné's, and unless we have some means of making a reliable diagnosis, we are liable to confound the disease at certain times with chronic tuberculosis, or in other cases, with parasitic enteritis. When tuberculosis is suspected it can be definitely settled by the tuberculin test.

The point, then to be considered is what is the best means of detecting the disease, particularly during its early stages. It is the absence of the characteristic clinical symptoms (i. e., diarrhea and emaciation) of the latter period which renders diagnosis

at first rather difficult. The feces or scrapings from the rectum may be microscopically examined for the presence of acid-fast bacilli. The method I adopt for taking a scraping of the bowel is as follows:

The rectum is emptied and syringed out with clean water. Then a watch-glass is passed with the hand into the rectum, and with the edge of the watch-glass the bowel is scraped from within, outwards. Portions of this scraping are thinly spread, with a platinum loop, in a cover-glass, fixed by heat, stained by the Ziehl-Neelson method, and examined microscopically with an oil immersion lens.

Although this method is successful in a certain percentage of cases, failure to find the organism does not necessarily prove that the animal is free from the disease, for, as I have already intimated, the organisms may be very numerous in such a scraping at certain periods and comparatively sparse at other periods. This shows, of course, that microscopic examination during the life of the animal is useful, but not infallible.

In 1909, Bang, of Denmark, employed tuberculin prepared from avian tubercle bacilli as a medium for diagnosis of Jöhné's disease in cattle. The dose he injected varied from fifteen to thirty-five minims, and he asserts that animals affected with Jöhné's disease react when tested with this form of tuberculin, as tuberculous cattle do to the ordinary tuberculin.

In 1910, Horne, of Christiania, experimented with avian tuberculin on a suspected calf, the animal having previously failed to react when tested with the ordinary tuberculin prepared from bacilli of the bovine type. He records that when he injected hypodermically the avian tuberculin the animal gave a rise of 3.8° F. eight hours afterwards. At later periods he tried the ophthalmic and cutaneous methods of testing on the same animal, and states he got a positive result on both occasions.

In 1911, Male, of Reading, in a paper read at the meeting of the Royal Counties' Veterinary Medical Association, gives a record of his results in the application of avian tuberculin on two herds in which cases of Jöhné's disease had been met with. Those animals which he considered reacters gave an average rise of 2.5° F. In a private conversation with Mr. Male, he stated that he had been successful in eradicating Jöhné's disease from both herds.

Although these results would seem to be positive and point to this form of tuberculin as being useful as a diagnostic agent in Jöhné's disease, I am still of the opinion that we ought not to be too hasty in accepting it as such until we have seen the result of its application on large numbers. So far it has only been employed among a few. When it has been more extensively used we shall be in a better position to gauge its usefulness and know what reliance we can place upon it.

We know that when ordinary tuberculin was first introduced there were many contradictory reports regarding its actions, and it was only after a large number of statistics had been collected and sifted that it was placed in its true place. Hence in this early and experimental stage of the use of avian tuberculosis as a means of diagnosis for Jöhné's disease it is necessary, to a certain extent at least, to receive the results with a modicum of caution. As the causal organism has now been grown outside the animal body, we may reasonably expect to see in the near future a reliable diagnostic agent being prepared from the organism itself.

Prophylactic Measures

All affected or suspected animals should be isolated and housed. If they have been previously housed, the stalls or boxes occupied by them should be thoroughly disinfected, their feces when removed should be covered with quick-lime and should not be spread on pasture land. If this is not possible it should be kept for several months before being used. If the suspected animals are in milk and are in fair condition I think it advisable to slaughter, as rapid emaciation may set in, and affected animals which get into low condition never regain a well-nourished one. As a preventative, Meissner recommends subcutaneous injections of an emulsion of lymphatic glands from affected animals.

Meat Inspection

In the case of foreign meat, which is, of course, imported unaccompanied by the offal, it is impossible to tell if the animal has been affected with Jöhné's disease, and the carcass is judged on its merits. Newly-slaughtered animals that are affected, in which the carcass is dropsical, and does not set well, are condemned, but if the carcass is well nourished, dry, and sets well, there is, to my mind, no justification for condemning it.

Therapeutics: A Committee Report*

By H. D. BERGMAN, Ames, Iowa

AS chairman of the Committee on Therapeutics, I shall first consider, and endeavor to answer, the oft-repeated and well-taken question of the practitioner: "Why do drugs fluctuate in price from year to year, why have certain drugs in common use doubled, trebled, and quadrupled in price during the past year?" I shall also endeavor to show how an extremely popular drug may "lose favor over night."

There is no one causative factor for the increase in price of drugs. One of the principal reasons, however, is the necessity, at the present time, of their coming up to pharmacopeial standards, and, while we are paying a higher price, we are getting a purer product and not one containing from 5 to 25 percent of impurities. Again, the increased demand has to do with the increase in price. At the present time, people do not treat their own ailments and those of their animals with simple home remedies as in the past, but there are more physicians and more veterinarians employed, and hence an increased demand for medicinal agents. We all know that demand regulates the price of any commercial product. Fluctuations in price of certain drugs depend largely also, on the success or failure of the crop from which they are derived. For example, the flax crop last year was a failure, and I presume you all know something of the price of linseed oil at present.

Two or three years ago santonin was worth in the neighborhood of $4.00 per pound. Today it is worth $17.00 [$23.00 now.—ED.], due, the wholesalers say, to crop shortage, and we are glad to note also that they claim the rise in price is only temporary. In the case of opium, in an effort to limit opium smoking in China the government will now allow only a certain amount to be produced in that country. The other opium-producing countries have also put a ban upon its exportation except for certain medicinal purposes, hence, of course, the price goes up. The Japanese control the production of camphor, and allow only so much to be produced, hence the increase in price.

Lastly, though it may seem peculiar, the increase in the price of many drugs is due to our more exact knowledge of their composition and medicinal value. Thanks to our eminent botanists, pharmacologists and chemists, whose researches have resulted in an enormous number of worthless drugs being thrown aside, and, although we now get a corresponding increase in price of the remaining drugs, yet we know exactly what we are using, and their various medicinal properties from a therapeutic standpoint.

An example of how suddenly a drug may lose its popularity, may be sighted in our old friend echinacea, which, a few years ago, was widely used, and indeed is used a great deal still; but, when the Council of Pharmacy and Chemistry of the American Medical Association made a complete study of echinacea from all standpoints, and the eminent Henry Kraemer, editor of the *American Journal of Pharmacy*, came out last July, 1911, with the report that echinacea had been investigated thoroughly and had been deemed worthless and un-

*Read at meeting of the Iowa Veterinary Association, Cedar Rapids, November 21–23, 1911.

worthy of further consideration as a medicinal agent, until more reliable evidence had been presented in its favor, the profession in general dropped its use, and the sales of echinacea decreased enormously.

Observations and results derived with a few of the new, and some of our older drugs:

Pyoktanin Blue

Pyoktanin which has been used successfully for some time in human medicine, has now won a place in veterinary medicine. As an antiseptic, disinfectant, and analgesic, it is extremely valuable. Excellent results have been reported from its use in surgery, disease of the throat and nose, wounds, malignant neoplasms, and in diseases of the eye. It is recommended as having a specific healing effect in foot-and-mouth disease. Pyoktanin is in the form of a powder and is used in from 1 : 1000 to 1 : 5000 solution. It is said to be active in solutions of 1 : 30,000. The powder is worth about $1.50 per ounce.

Sulphocarbolates or Phenolsulphonates

Both sodium and zinc sulphocarbolate have stood the test, and demonstrated their value as intestinal antiseptics and tonics, internally, and as astringents and stimulants to foul ulcers and slowly granulating surfaces externally. We have been getting excellent results at the college hospital from the use of zinc sulphocarbolate applied as a dusting powder to slowly granulating surfaces, especially in cases of summer sores.

Balsam of Peru

While speaking of stimulants and antiseptic dressings for foul wounds and slowly granulating ulcers, I would call your attention to balsam of Peru applied undiluted from which I have observed good results.

Iodoform

The use of iodoform in chronic metritis or pyometra with purulent discharge, has been tested quite thoroughly of late with favorable results. The iodoform with boric acid two to four drams of each, is placed in a capsule, and inserted into the uterus following whatever antiseptic injection is being used. A capsule is not necessary every day, but every third or fourth day, and gradually diminishing to one a week or one in ten days.

Petrox Iodine

Petrox iodine is a new substitute for tincture of iodine for external application where the absorption of the iodine is desired as in actinomycosis, etc. Petrox is a saponified oleaginous vehicle for the external application of iodine. The iodine may be incorporated in the petrox in any percentage desired. It has the advantage over the tincture of iodine, in that, when the tincture is applied, the alcohol at once evaporates leaving on the surface only the dry iodine, which is not absorbed as thoroughly, as it is in petrox iodine, where the iodine remains incorporated in the oily vehicle and is slowly and surely absorbed.

Stovaine

We have been using stovaine for local anesthesia at the college hospital for some time. It seems to possess all the desirable qualities of cocaine, and, has the advantage of not producing the nervous excitement that cocaine is likely to, when a large area is being anesthetized. We usually use one to two drams of a five-percent solution according to the area of operation. Minor operations may be rendered almost bloodless by the injection of a dram or so of adrenalin chloride at the same time that the local anesthetic is injected.

Nuclein

The action of nuclein in producing a hyperleukocytosis and thereby having a favorable action in inflammations, such as peritonitis, puerperal infections, etc., seems to be questioned. From what reports I have been able to get, and also from a personal standpoint, the general opinion seems to be, that the value of nuclein has been somewhat overestimated.

Autogenous and Polyvalent Bacterins

A comparison of the results with the use of bacterins seems to show, that from a comparative standpoint the advantage lies with those prepared from the culture made from the discharges of the animal to

be treated, namely, the autogenous bacterins. This is only natural, however, as we are certain that they contain the invading microorganism.

Bismuth Paste

The use of bismuth paste in the treatment of fistulous tracts and abscess cavities seems to be quite successful, and is growing in popularity with a number of veterinarians. The theory of its action, aside from its antiseptic and astringent properties, seems to be that the solid substance in the fistulous tract displaces secretions by its own weight, and also acts as a frame work for the formation of healthy granulations. After carefully drying the cavity with gauze, the paste is heated and injected with a syringe. The opening is then closed with gauze, and the paste allowed to harden. The external opening usually heals in a few days, and the paste is absorbed, and the sinus obliterated by connective tissue.

Camphor

I do not believe that the real value of camphor as a therapeutic agent is appreciated by the profession in general. All the great German therapeutists speak very highly of this drug. Therapeutic doses of camphor stimulate the entire nervous system, especially the brain. It is also a heart stimulant, increasing blood pressure, as is evidenced by the color of the visible mucous membrane after its administration. Camphor is an antidote for any poison which depresses the cerebrospinal centers or the heart. It has also a marked antipyretic action and will even lower bodily temperature in healthy animals. The German authors claim that camphor is a specific in septic fevers such as septicemia and pyemia. I have observed excellent results following the use of camphor in these conditions. It may be used in these cases either internally or subcutaneously. As high as 100 Cc. to 250 Cc. of the spirits or oil of camphor may be administered subcutaneously in twenty-four hours.

Frohner recommends oil or spirits of camphor subcutaneously in contagious pleuro-pneumonia in doses of 50 to 150 Cc. Externally, camphor is valuable in treating mastitis, tendo-vaginitis, slowly granulating wounds, ulcers, fistulas, etc. In phlegmon spirits of camphor may be administered to horses in a bolus and subcutaneously as the spirits or oil of camphor.

Conclusion

In concluding my report, I wish to say that I firmly believe that success in therapeutics depends primarily upon accuracy of diagnosis. After diagnosis comes treatment, and the choice of medicinal agents is by no means simple, for here probably hangs the professional success of the practitioner. Lastly, the most reliable medicinal agents that the market affords are none too good for veterinary practice. For through the use of unstandardized preparations, or preparations of indefinite potency otherwise skillful treatment often fails.

Cocaine and Adrenalin in Acute Affections of the Feet*

COZETTE (*Repertoire de Laquerriere*) has recently treated three horses attacked by severe acute founder, and two horses suffering from acute arthritis of the feet, in which he employed local anesthetics to relieve the severe pain caused by these affections. In the first horse, which was attacked by acute founder of the four extremities, he first injected 10 Cc. of a five-percent solution of cocaine, along the course of the planter nerves of the posterior limbs. Then the next day he made a second injection on the two anterior limbs, in which he associated adrenalin with cocaine, which injection was composed of:

Cocaine hydrochloride...0.10 Gm.
Adrenalin hydrochloride 1.00 Gm.
Physiologic salt solution 10.00 Cc.

*Translated from *Annals de Medicine Veterinaire* by Dr. A. S. Burdick, Chicago.

Finally, the author also made a third injection on the succeeding day. The results obtained were very satisfactory. The animal which, prior to this, could not stand, after the first injection placed its weight freely upon the two posterior limbs; and after the second injection the forelimbs participated in the support. A radical cure was obtained in fifteen days. The result was also favorable in two other horses foundered in the front legs.

As to the horses attacked with acute arthritis of the feet, the cocaine-adrenalin injection exercised a manifestly favorable action, through relieving the suffering to a very large degree.

The abstractor in the *Repertoire* recommends the method of treatment suggested by Cozette, which he has himself employed in the treatment of founder. He says that the local anesthesia is particularly useful, because it permits the horse to walk and exercise, which, as Lienaux points out, is one of the most important factors in the cure, since it decongests the limb and directly combats the lesions characteristic of founder.

The abstractor believes that the quantity of adrenalin used by Cozette is too large and likely to produce in some subjects gangrenous lesions. He believes that the following solution, which produces complete anesthesia for three hours, presents no danger:

Cocaine hydrochloride.....20 ctg.
Adrenalin hydrochloride.... 5 drops
Distilled water.....10 Gms.

This will anesthetize the limb when applied along five centimeters of each nerve. The solution can be injected during three succeeding days. In cases of founder of the four limbs it is desirable to replace the cocaine with an equal quantity of stovaine, or alypin, which is less toxic.

Treatment of Paroxysmal Hemoglobinemia With Subcutaneous Gas Injections*

GUIDED by the studies conducted by Professor Cadeac, Brunschwig (*Journ. de Med. Veter. et de Zootechn.*, Oct. 1911, p. 577) considers milk-fever and paroxysmal hemoglobinemia (Azoturia) as "two sister diseases," which present not only the same symptomatic expression, but show unquestionable ties of "causality, nature and pathogenesis." Brunschwig's experiments seem to show that treatment similar to that employed by Evers in milk-fever gives equally surprising results in hemoglobinemia. He injects into the subcutaneous tissue atmospheric air mixed with medicated vapors. Before being injected under the skin, this air is conveyed under pressure through an antiseptic liquid and finally filtered through cotton. The skin is punctured with a Pravaz needle of large caliber.

The antiseptic mixture employed is as follows:

Essence of turpentine.....4 parts
Essence of thyme.....2 parts
Creosote.....
Iodoform-ether (10%).....
Thymol.....
Camphor, aa.....1 part

The skin of the neck, chest or shoulder, where the subcutaneous connective tissue, is the most easily injected. One can see the gaseous tumor spread in size from point to point after injection. The skin is lightly massaged at the point of injection and the inflation increased to a point where it gives resonance upon percussion. This result is obtained easily without producing great pressure. An ordinary bicycle pump is sufficient.

These injections produce no reaction and appear to be entirely painless. The gas does not remain in the local region injected, but spreads into localities quite distant, without, however, extending itself uniformly. The emphysema disappears more or less quickly according to the quantity

*Translated from *Annals de Medicine Veterinaire*, by Dr. A. S. Burdick, Chicago.

of gas injected and also according to the animal. After eight hours or more, it is still perceptible in some regions.

Brunschwig has not had recourse to gaseous injections for cases presenting light attacks or during convalescence, in quite a number which he has had to care for. He has employed this method in four very sick horses, and obtained four quick cures. Animals which could not stand up before the injection were able to get up one or two days after this operation. The happy results observed by the author following this therapeutic novelty are clearly of a nature which warrant further attempts of the same character.

Castration of the Horse While Standing*

PROFESSOR EBERLEIN, of the Veterinary University of Berlin, reviews, in the *Archiv. f. Wissensch. u Prakt. Tierheilkunde*, the literature concerning castration of the horse while standing. In a few words he indicates the attitude of the various authors as to this operation, and describes the peculiarities of their methods.

The following are favorable to castration of the horse while standing: Bouillard, Mace, Joyeux, Miles, Seibert, Riviere, Salinier, Cagny, Cuchu, Nocard, Chauveau, Descroix, Mesnard, Blanleuil, Griffiths, Hill, Wyman, Liautard, Crabb, Juliet, Ballon and Reynolds.

The following are opposed to this operative position: Peuch and Toussaint, Berdez, Vogel, Goubaux, Leblanc, Trasbot, Hoffman, Moeller, Bayer, Cadiot, Almy, Hendrickx, Frick and Degive.

This operation has been practised in different ways. As a general rule most operators have employed only slight methods of restraint, namely: the twitch, the hood, and the hobble. Some of them (Bouillard, Blanleuil, Hill and Reynolds) even operate upon horses free from all restraint; while Wyman simply backs the animal into a corner.

Bouillard and Hill call special attention to the importance of the preliminary examination of animals which are to be castrated, in order to prevent possible evisceration. A few practitioners (Mill, Hill, Wyman and Reynolds) remove the two testicles from the left side of the animal. Others (especially Joyeux) place themselves on the right side; still others (Bouillard, Siebert, Salinier and Blanleuil) remove the gland from the side corresponding to the testicle to be operated upon.

The testicles are generally uncovered and removed, one after the other. However, Liautard first opens the two scrota, and then proceeds to remove the two glands. Miles, Hill, Wyman and Reynolds all practise castration from the left side of the animal, removing first the right testicle. Furthermore, Bouillard operates sometimes with the testicle covered and sometimes with the testicle uncovered, while Joyeux and Blanleuil operate always upon the covered testicle, and the other operators have generally had recourse to the process with the cord uncovered. The removal of the testicle is made (1) by torsion; (2) by ligature of the testicular vessels; (3) by the ecraseur; (4) by the emasculator; and (5) by the clamp. Juliet is the only practitioner who recommends the compression of the scrotum and two cords, *en masse*, by the clamps.

Professor Eberlein, after having been present at two operations practised on the standing animal by the English veterinarian; Reynolds, castrated forty stallions by the following process:

Preparation of the Subject for Operation

The stallions brought to the clinic of the Veterinary University of Berlin to be castrated are generally not operated upon until the next day, or the second day, after their arrival, even when their general condition is absolutely normal. During this time Eberlein makes one or more ex-

*Translated from *Annals de Medicine Veterinaire*, by Dr. A. S. Burdick, Chicago.

plorations of the scrotal and inguinal regions for the purpose of determining that there are no abnormalities, and to ascertain if the animal permits exploration of the testicular region without difficulty. To assure himself that the animals may not become "ticklish" the author has recourse to the employment of the twitch, as soon as it resists somewhat. He has been able to determine that stallions difficult of exploration rapidly become docile after several examinations with the twitch applied.

Animals to be castrated ordinarily receive nothing to eat or drink the evening and the morning preceding the operation. Experimentally he operated upon ten subjects which had been submitted to no preliminary preparation, and was not able to observe the slightest inconvenience in these cases. Just prior to undertaking the operation it is necessary to explore, for the last time, the scrotal and inguinal regions, and one should not proceed with the operation unless everything is found normal. Eberlein throws the stallions which are very difficult to handle and those in whom the testicular cords are short.

Preparation of the Operative Field

It is not generally the custom to use soap or antiseptic solutions to wash the scrotum. Eberlein rubs it with a tampon of tow or gauze, then with a tampon moistened in an alcoholic solution of corrosive sublimate. To complete the preparation he applies, to the operative field, twice, dilute tincture of iodine (equal parts of tincture of iodine and alcohol). This process gave very good results. The wounds cicatrized nearly always without suppuration.

General Anesthesia

It is never necessary to have recourse to general anesthesia in operating upon docile animals—particularly upon horses of large lines. Excitable animals receive, ten minutes before the operation, an aqueous solution of 10 to 20 Grams of chloral, according to weight. The anesthesia is habitually well borne and produces the effect desired.

Local Anesthesia

The author has employed this only once. He injected on each side, and over the epididymis, thirty centigrams of novocaine dissolved in ten Grams of water.

Method of Restraint

Having had recourse, upon several occasions, to the various method of restraint, Eberlein soon recognized that they were not only useless, but even harmful, and therefore he has employed nothing more than the twitch. The animal is held by an assistant and operated upon in an open court.

Instruments

A little convex bistoury, an emasculator and sometimes a button-bistoury and scissors. The author always has at hand a pair of clamps, in order to have them ready in case of evisceration or epiploic hernia, accidents which he has, however, not yet observed. Finally two pairs of Pean forceps and ligatures are ready for employment in case of hemorrhage.

Operation

The operator places himself opposite the left flank, seizes the left testicle, stretches the scrotum on this testicle and with a quick movement cuts from the front, backward—scrotum, dartos and vaginal sheath. Then he seizes the testicle, stretches the cord with one hand, while with the other he places an emasculator a little above the epididymis, having care to push aside the scrotum, which might be caught between the jaws of the instrument and render their closing difficult or perhaps impossible. The emasculator is closed with a quick, energetic movement. The testicle usually falls at once; however, it sometimes occurs that the last fragments of tissue are not immediately cut and that they retain the organ. In such a case the section is completed by torsion. To avoid hemorrhage the author recommends the operator to see to it that at the moment of the application of the emasculator the vessels are caught between the jaws of the instrument. The emasculator is left applied for one or two minutes.

The operation on the right testicle is made in a similar manner, the operator remaining on the left side of the animal. The wounds are dried and dusted with an antiseptic powder. Professor Eberlein considers the employment of clamps out of date in the castration of normal stallions.

Here, in résumé, is the author's opinion of castration while standing:

Horses generally keep quiet when the operator seizes the testicle; they do not try to defend themselves nor strike the operator. Sometimes they wish to lie down, and sometimes indeed they *do* lie down. In the first case he releases the testicle and makes a step forward or backward in order to get a good position to finish the operation. If the animal has lain down, the author causes it to get up, and sometimes he continues the castration without restraining the subject.

Castration wounds generally cicatrize without suppuration, and up to the present time Eberlein has not observed any accidents following, such as hemorrhage, evisceration, epiploic, hernia, edema, etc. "Finally," he says, "I have been able to demonstrate that there are some real advantages in standing castration. First, it is rapid, and requires hardly ten minutes; second, it requires but a single assistant; and third, it avoids the accidents of casting."

Enzyme Content of Milk From Diseased Udders*

By DR. H. ULLMANN

Translated by DR. LEWIS W. FETZER, Washington, D. C.

THE great significance of milk as a necessary food for infants, growing children and adults makes it obvious that all the efforts of modern milk hygiene should be directed towards obtaining a faultless milk for the consumer, and to exclude all milks from commerce which are detrimental to health. The control of the milk supply at the market or point of consumption heretofore consisted of a physical and chemical examination of the milk in question. These methods, however, have long been known to be inadequate, and one was therefore compelled to examine the milk at the producing point, i. e., at the dairy barn.

Above all things an up-to-date and rational milk inspection system must see that no milk coming from diseased animals or dirty milk gains access to the milk supply. Notwithstanding the fact that there exists in general an obligatory and general inspection system of the condition of the animals furnishing milk and the handling of the milk, it has not up to this time been rigidly enforced.

Modern milk hygiene is therefore engaged in devising easy and effective methods which will enable veterinarians to detect a milk which originates from a diseased animal, in other words, methods that will detect with certainty, milk which is injurious to health.

In previous years on the basis of certain chemical and physical characteristics milk was adjudged as being of either normal or pathologic origin, but on the whole these results were unreliable.

On the other hand one could note that a milk originating from a diseased mammary gland showed some changes in its sediment, hemolysin and enzyme content. Attempts were therefore made by various workers to utilize these facts in the practical control of the milk supply and with the result that a variety of tests were devised by which one is in a position to detect pathologic milk without fail.

The problem in this investigation was to establish if, and in what way, the enzyme

*Deutsche Schlacht. und Viehof-Zeitung, Berlin, Vol. 12 1912) 21, pp. 319-332.

content of milk is affected by the occurrence of mastitis and whether the variations from the normal were constantly present with this condition or not. In addition to this it was desirable to know whether or not, one could detect the presence of pathologic milk in a mixed milk, by a series of reactions.

Thirteen cows having inflamed udders were observed. The sampling of the milk and the testing were done by the author himself. In most instances the milk was sampled in the morning, but in some cases the samples were taken between 11 a. m. and 12 m. and in others at 7 p. m. The evening milks were kept in a refrigerator until the next morning and examined then. In every case the milk from each quarter was milked into a separate sterile Erlenmeyer flask. The udder was in most instances washed with warm water and dried with a clean towel before drawing the milk.

The milk samples were taken at intervals of three to four days apart and in the most cases until the mastitis ceased. In a few cases where the milk looked abnormal and the clinical findings were negative the testing for variations in enzyme content was continued.

The milk from each quarter and a composite sample of the four quarters were examined for the amount of catalase, oxidase, peroxidase and reductase. For practical reasons diastase was looked for only in the milk from the diseased quarter, and in the composite.

Where only small amounts of secretion were obtained, a composite sample was prepared and tested by the usual reagents.

Before every test the sample of milk in question was shaken thoroughly in order to get an even distribution of the pus flakes and cream. Small portions of the samples were then measured out with a graduated pipette or where this was not possible (where numerous flakes were present), it was done by pouring the milk into a graduated cylinder.

In addition to testing for the various enzymes all the milks were examined in regard to their reaction to litmus, i. e., whether acid, alkaline or amphoteric. A portion of each sample was also centrifuged in order to determine the character of the sediment and the leukocytes, bacteria and the other pathologic products contained therein studied microscopically. As a result of this work the following conclusions were drawn.:

1. The enzyme content of milk is affected by the occurrence of mastitis.
2. In general the enzyme content of milk from mastitic animals is increased, although this undergoes great variations.
3. The enzyme content of milk is mostly dependent upon the amount of change which has taken place in the secretion and less so upon the clinical appearance of the mammary gland.
4. The catalase content of a mastitis milk is almost always increased. The catalase of the mixed milk is also increased.
5. A watery altered milk as a rule shows a high catalase figure, and which is always due to the admixture of the products of inflammation.
6. The catalase is always increased during the whole cycle of the disease and often remains so long after all clinical symptoms have vanished.
7. Mastitis milk rich in catalase when fresh reacts more or less alkaline.
8. Reductase (Schardingers' enzyme) at the beginning of the mastitis is present in a normal or increased amount.
9. A highly altered watery milk shows a diminished amount of Schardinger enzyme; in many instances it is absent.
10. The Schardinger reaction is therefore not reliable for detecting mastitis.
11. The oxidase and peroxidase often are increased but in some instances normal or subnormal amounts are present.
12. In a milk showing marked changes (watery) the oxidases are often not present.
13. The diastase test is not suitable for detecting mastitis, as the diastase content of pathologic milk is a very variable quantity.
14. Of all the enzyme reactions the catalase test is the only one which will detect a mastitic condition with certainty.
15. Henkel's apparatus is very suitable for examining milk for its catalase content particularly where numerous samples are in question.

AMERICAN JOURNAL OF
VETERINARY MEDICINE
THERAPEUTICS, SURGERY, SANITARY SCIENCE

Two Dollars a Year

Single Copy Twenty-five Cents

GUARANTEED PAID CIRCULATION OVER 7,000 MONTHLY

ADVERTISING RATES

No. Insertions	Page	Half Page	Quarter Page	Eighth Page
Single	$ 25.	$ 15.	$ 10.	$ 6.
Three Months	70.	42.	28.	17.
Six Months	135.	80.	54.	32.
One Year	250.	150.	100.	60.

CLASSIFIED ADS. $1.00 per issue for 25 words or less, invariably cash in advance.
All bills for advertising will be collected by sight draft after due notice.

Subscriptions from the United Kingdom should be sent to our London Office in care of Messrs. Bailliere, Tindal & Cox, 8, Henrietta Street, Covent Garden, London, England.
Address all communications to D. M. CAMPBELL, 1761 Lawrence Avenue, Chicago.

Typhoid Prophylactic Vaccination

THE typhoid season and the fly season, for they amount to the same thing, is at hand and our national disgrace, a uselessly high mortality from typhoid fever is again being enacted.

Typhoid infection is carried chiefly by three agents, flies, uncooked food and water. Milk and water are responsible for most attacks of typhoid during the winter season, flies and vegetables for the greater number during the summer.

Typhoid is first of all a filth disease, most common where large numbers are segregated in temporary quarters, for under such conditions insanitary practices almost invariably prevail. Army camps and summer resorts have always offered the most fertile fields for the typhoid bacillus. That the typhoid rate is no higher in large cities than it is in the country is due of course to the better sanitary regulations in the former, or to the shockingly insanitary conditions obtaining on most farms.

The prophylactic use of a typhoid bacterin is an effective means of preventing this disease. This vaccination has received the indorsement of those responsible for the health of our soldiers, and compulsory typhoid vaccination is now a regulation in army camps.

During the Spanish-American war, with 10,759 men of the Seventh Army Corps encamped in Jacksonville, Florida, in 1898, there were 1,728 positive cases of typhoid and 2,693 additional cases of fever that were believed to be typhoid. A total of 4,422 cases with 1,248 deaths. Typhoid vaccination was unknown at that time.

During the summer of 1911, 12,801 soldiers were encamped near San Antonio and all received a prophylactic typhoid vaccination. But one case of typhoid fever developed and this man, a teamster, recovered.

The experience of the British Army in India and in Africa, both before and after the use of typhoid vaccine has shown results similar to those of our own army. It is not probable that typhoid will longer continue the bane of army camps and the cause of a greater number of deaths than the enemies' bullets.

SOLDIERS' AND SAILORS' MONUMENT, INDIANAPOLIS, INDIANA

This monument stands in the very center of Indianapolis, midway between the Claypool Hotel, the headquarters of the A. V. M. A., and the German House where the meetings will be held. It is universally admitted to be the grandest achievement of Architectural and Sculptural Art in the world, designed to glorify the heroic epoch of the Republic and to commemorate the valor and fortitude of Indiana's Soldiers and Sailors in the War of the Rebellion and other wars. DIMENSIONS.—Diameter of Plaza, 342 ft. 7 in.: Monument Foundation, 69x53 ft.; Height of Monument from street level, 284 ft. 6 in.; Height of Victory Statue, 38 ft. The balcony, 228 1-2 ft. above the ground, is reached by an electric elevator or by stairway consisting of 32 flights—324 steps. On reaching the balcony visitors look over a beautiful panorama of Indianapolis and vicinity—a delightful view, not surpassed anywhere. Below the balcony is a bronze astragal bearing the dates 1861, 1865, on the four sides of the shaft, illuminated by electricity Midway the Monument is a second bronze astragal, emblematic of the Navy, and further down, a third bronze astragal representing the Army. On the east and west sides of the Monument are the two largest groups that have ever been carved out of stone—the one on the east representing War, the other Peace. On the south front are two heroic statues, each cut out of a huge block of stone; one represents Infantry, the other an ideal Cavalry Scout. On the north front are the Artillery and Navy representatives, same as on the south. On the east and west sides of the terrace are magnificent cascades, over each of which flow 7,000 gallons of water per minute. With eight immense candelabra carrying 48 arc and 150 incandescent lamps, together with the 500 incandescent lamps at the top, Monument Place is the most brilliantly and beautifully lighted spot in this country.

The Bureau of Animal Industry requires of all its traveling Veterinary Inspectors, the men doing field service in quarantine work and others likely to be sent from their homes to be immunized against typhoid. Most veterinarians in general practice must frequently drink water on farms where typhoid infection is present, or eat unwashed fruit or raw vegetables on such farms, and for this reason, even though no probability of typhoid infection exists at their homes, should avail themselves of the immunity to this disease to be secured from prophylactic vaccination.

The vaccination is simple, harmless and inexpensive. Persons should not be vaccinated when they are ill nor should they be exposed to typhoid during the first few days after vaccination. High medical authorities are now urging that prophylactic typhoid vaccination be made general and compulsory.

The United States suffers severely when its typhoid rate is compared with that of other civilized countries. It is difficult to rouse the interest of the average American citizen in sanitary problems that confront him all the time. He will become panicky on hearing that Asiatic cholera or yellow fever, or even leprosy has appeared in his vicinity but is indifferent to his vastly greater danger from tuberculosis and typhoid fever. Our death rate from typhoid fever is threefold greater than that ofGreat Britain, Sweden or Norway and the death rate from this disease in our principal cities is from three to twenty times as high as it is in the large cities of Europe. Commenting on this *Public Health Reports* says:

"On an average in every 100,000 population we had, compared with European results, 18.5 deaths and at least 180 cases of typhoid fever which should never have occurred. A conservative estimate will place the deaths from typhoid above 25,000.

"For the whole United States the number of typhoid cases for each year preventable by methods within our grasp would probably reach 175,000, and the deaths so avoided would total 16,200. In 1909 there were more cases of typhoid fever in the United States than there were cases of plague in India, in spite of the fact that India's population is two and one-half times that of the United States."

The German House, Indianapolis, where the meetings of the A. V. M. A. will be held August 26-30. A mile from it across the center of the city is the Claypool the headquarters of the Association during the meeting.

Reference to Secretary Marshall of the A. V. M. A. on page 290 of the July issue, was made solely on the authority of the Editor and not by request or suggestion of the Local Committee. This was plainly indicated in the paragraph referred to, but that no one may be misled, it is reiterated here.

A NEW AMERICAN VETERINARY ASSOCIATION

The meeting of the Missouri Valley Veterinary Association at Omaha July first, second and third was a success in every respect and of more than ordinary value to those in attendance. The local committee with the very material assistance of the Omaha Commercial Club arranged for the entertainment of the visiting veterinarians and their wives, and there were many of the latter, to the entire satisfaction of all. The literary program was fully up to the high standard heretofore maintained by this association and the clinic, the most interesting, the best managed and the best attended that the association has ever had at a summer meeting. Nearly all attending the meeting stayed for the clinic.

The subjects for the clinic, which was held at the Live Stock Pavilion in the South Omaha Stock Yards, consisted of twenty lame, city horses. These cases were diagnosed and discussed by Dr. Jospeh Hughes of Chicago and the prognosis and treatment was outlined and discussed by Doctor L. A. Merillat of Chicago. Veterinarians in the audience were given an opportunity to ask such questions as they desired concerning the cases.

During the meeting the "American Association of State and Provincial Veterinarians" was formed. The object of this association is the improvement of state, interstate, and international sanitation. The membership is limited to veterinarians holding the office of state or provincial veterinarian or veterinarian to a state live stock sanitary board and meetings will be held annually at such time and place as the executive committee shall elect.

Those allying themselves with the new association were state veterinarians J. I. Gibson of Iowa, B. F. Davis of Wyoming, J. M. Wright of Illinois, O. A. Eliason of Wisconsin, A. Bostrom of Nebraska, S. Sheldon of Missouri and K. W. Stouder, veterinarian to the Live Stock Commission of Kansas. Dr. J. I. Gibson, Des Moines, Iowa, was elected president and Dr. S. Sheldon, Columbia, Missouri, secretary-treasurer.

DEDICATION OF ILLINOIS BIOLOGICAL LABORATORY

The twenty-ninth semi-annual meeting of the Illinous Veterinary Medical Association, held at Springfield, July 9th was in many respects the most notable in the history of the association.

Although only a one-day meeting, the attendance was excellent for a state meeting; one hundred and eighty-five having registered and allowing for the number who for some reason always fail to register at any meeting, brings the attendance to well over the two-hundred mark. The forenoon session was spent in reading and discussing papers and in listening to interesting reports from various practitioners.

Ready to start for an out-clinic, Division of Veterinary Medicine, Colorado State Agricultural College. Last year over 1,100 cases were presented in the in- and out-clinics; among the number horses, cattle, sheep, hogs, dogs and chickens. From left to right the machines are: Dr. Barnes', Dr. Kaupp's, Dr. Glover's, and the college auto with Dr. Kingman at the wheel. The building contains the main offices, Pathology Museum and a part of the class rooms of the Division of Veterinary Medicine.

The "feature" of the meeting, as the newspapers put it, was the dedication of the State Biological Laboratories. The laboratory buildings have just been completed. Equal facilities for research work and for the production of hog cholera and other prophylactic serums are not maintained by any other state. The buildings for these laboratories are numerous and complete to the minutest detail, they are of metal lath and concrete construction with enameled interior. Sterilization rooms, bleeding rooms, bottling rooms, incubators, refrigeration and offices are all provided for, while near by and on a rather

steep slope are numerous pig-pens with concrete floors, occupying 15,000 square feet and containing at this time 300 bleeders for the production of hog cholera serum.

That Illinois has these laboratories is due to the influence of the veterinary profession of the state and to the indefatigable and persistent efforts of the Honorable P. S. Haner, president of the State Board of Live Stock Commissioners. The adaptation of the buildings to the purpose for which they were erected and to the completeness of the facilities provided are due to the foresight of Dr. A. T. Peters, director of the laboratories.

The dedication of the laboratories was attended by Governor Deneen, Secretary of State Doyle, State Treasurer Mitchell, State Auditor McCullough, Attorney General Stead, State Senators Funk and Hay, Judge Sherman, Judge Burroughs, Frank Whip and Doctor Norbury of the State Board of Administration and Phil Haner, C. A. Lowry and T. F. Russell of the State Board of Live Stock Commissioners. Most of the State officers addressed the meeting during the dedication exercises.

Probably no other veterinary meeting has ever been honored by the attendance of an equal number of state officials. The fact that practically every state official in Springfield could be induced to go several miles into the country to attend a veterinary meeting on an intolerably hot afternoon is a tribute to the Illinois veterinarians and a testimonial to the importance of the association in civic affairs of the state.

SECRET REMEDIES

A valued reader has registered strong objections to our publication of the formulas of various, widely-advertised, proprietary veterinary remedies, alleging that such information in the hands of veterinarians conduces to the use of these products and to quackery in general, and further stating that "such material has no place in a professional journal that even *claims* to be ethical."

It is needless to say that this reader's view of the matter of the publication of the formulas of proprietary remedies is not our own nor do we believe it is held by any considerable portion of the readers of this journal. If the publication of the formulas of secret medicines conduced to their greater use they would immediately cease to be "secret." The manufacturers are anxious to extend their popularity and most certainly would avail themselves of this opportunity to increase the sales if publishing the formulas would accomplish this.

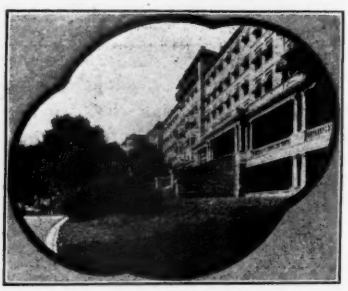
Lawn at French Lick Hotel, French Lick Springs, Indiana, on the "Monon Route." An ideal spot for a short vacation.

The greatest recommendation for, or attraction to proprietary remedies is the mystery that shrouds them and the veterinarian that is in a position to tell his clients exactly what his (the client's) favorite cure-all contains and to show him that he is paying ten dollars a gallon for disguised linseed oil and three times as much for colored turpentine, is in a position to interfere with the sale of the cure-all, to the advantage of both himself and his client.

Another view of the matter, suppose a veterinarian is called to see a case of indigestion, due to overloading and finds his patient has already been given six bottles of "Ketchem and Skinem's Universal, Pain, Colic, Strangles, Rheumatism, Lameness, Founder, Farcy and Gall Cure." Will he not be in a better position to prescribe for this case for knowing the formula of Ketchem and Skinem's remedy? Suppose this remedy contains two ounces of tincture of opium to the bottle or an equal amount of fluid extract of aloes or cannabis indica or of oil of turpentine or a dram of fluid extract of belladonna to the pint.

Wouldn't a knowledge of this be worth while in treating this patient?

Proprietary veterinary remedies are much used in the treatment of animals, should not a veterinarian therefore possess fairly accurate knowledge as to their composition and effects as a matter of common information, if not for any utilitarian purpose? We believe he should and we believe for the reasons given above and for many others which might be given that our critic is wrong in his contention.



Veranda, French Lick Hotel. It is the desire of the "Monon Route" to call the attention of the delegates to the famous French Lick and West Baden Springs which can be easily reached from Indianapolis. This offers a splendid opportunity after the Convention to spend a few days at the famous resort, returning direct to Chicago. The round trip, Chicago to Indianapolis, is $7.40, returning via French Lick Springs is $11.55.

MISSING NUMBERS

Occasionally, copies of any publication will fail to reach its subscribers, but the percentage of those who fail to get their journals, should be exceedingly small with a publication that uses an improved, mailing system, such as ours.

In addressing by hand a few addresses in every thousand will be incorrectly written even by the most careful addressers but where the addressing is done by an automatic addressograph as it is for VETERINARY MEDICINE every address *must* be correct, if it is correct on the stencil and as a great deal of care is used in making and checking the stencil and as once made it is always the same the chances for error are very few indeed.

Magazines receive rough handling in the mails and occasionally a wrapper will be torn off and of course the subscriber for whom that copy was intended will fail to get it, but most of the copies of VETERINARY MEDICINE that are lost in the mails are lost in the home post offices of the subscribers. Any subscriber failing to get his copy of VETERINARY MEDICINE by the time it is due should notify the publisher *at once* in order that another copy may be sent and that steps may be taken to avoid the miscarriage of subsequent numbers.

The stencil shows the date of expiration for each subscription and this appears on the wrapper every month, watch it and renew promptly when your subscription expires to avoid missing the first succeeding issue. Thus "Aug. 12" means that your subscription expires with this issue—August, 1912. Wrappers for the next issue will be addressed soon after you receive your copy for any month, to avoid probable omission of your name from the list your renewal should be received before the stencil for your name is taken out of the list.

Extra copies of recent numbers (except April, 1912) may be had for the asking and any who have missed copies should take this opportunity to complete their files.

BOOKS

Truths: Talks With a Boy Concerning Himself, by Edith B. Lowry, M. D. This work, with "Confidences" and "False

French Lick Hotel, French Lick Springs, Indiana. Belongs to "Tom" Taggart of political fame. Rates $4.00 per day and up, American plan. A world-famous summer resort on the "Monon Route."

Modesty," and "Herself," mentioned below, by the same author, have created a furor among social workers. They are "psychological-moment" books, in every sense of the word. Some of them have appeared in serial form in prominent magazines, all have received practically unanimous endorsement from the educational, religious and medical press, and much favorable comment from popular magazines and daily newspapers.

Of course they are not veterinary books, or even medical, except in the broadest sense of the term, but rather sociological. The questions discussed are of momentous importance in the building of good citizenship, a matter in which veterinarians are of course as much interested as are any other class or profession. The language, the style of these books, are always unobjectionable.

"Truths" is a straightforward talk about reproduction, in plants, in lower animals, higher animals and finally in man, told in the words of an uncle who is his nephew's chum—explanations as the opportunity offered, by occurrences in nature. A book designed to show a father his duty in the education of his son in matters pertaining to sex and how to perform this duty.

Cloth bound, 95 pages. Forbes & Company, Chicago 1912. Price 50 cents.

—

Confidences: Talks with a Young Girl Concerning Herself, by Edith B. Lowry, M. D.

The confidential relationship that should exist between every mother and daughter is ably illustrated.

The subject of hygiene during adolescence is well given. The origin and development of life is explained—to a certain extent—to be followed later by further explanations by the mother as opportunity offers.

Cloth bound, 93 pages. Forbes & Company, Chicago, Ill. 1912. Price 50 cents.

False Modesty: That Protects Vice and Ignorance, by Edith B. Lowry, M. D. A description of the appalling extent of sexual crime, that exists not only in cities, but is even more prevalent in rural districts. The author cites as a prevention for these conditions the early and proper education of both boys and girls in matters pertaining to sex.

A great deal more space is devoted to telling of the extent of sexual vice and its cause than is given to a discussion of the means of preventing it by education and how this instruction is to be imparted.

"False Modesty" is mainly for parents and to a less degree for teachers, an appeal for them to see that the child is given the correct instruction in this matter.

Cloth bound, 110 pages. Forbes & Company, Chicago, 1912. Price 50 cents.

—

Herself: Talks With Women Concerning Themselves, by Edith B. Lowry, M.D. This book begins with an excellent popular description of the anatomy of the generative organs in the female and the physiology of reproduction, a discussion of female diseases and of venereal disease. The author pays her respects to fake medical concerns in no uncertain terms and takes an advanced stand on the subject of the limitation of offspring. The reader cannot refrain from believing the prevalence of immorality is exaggerated, and there is a disposition on the part of the author to go to extremes in excusing sexual vice because of its cause—ignorance. There is much advice on how to instruct children as they grow up in matters pertaining to sex.

Cloth, 221 pages. Forbes & Company, Chicago. 1912. Price $1.00.

Golf Grounds, French Lick Springs on the "Monon Route." A side-trip, from Indianapolis to French Lick Springs, will be a very popular one for veterinarians attending the A. V. M. A. this year.

WORLD'S WORK in Veterinary Science

A digest of all the Current Literature of Comparative Medicine

By Dr L. W Fetzer Washington, D.C.

THE diagnosis of anthrax by Ascoli, method by G. Roncaglio Clin. Vet. (Milan) 1911, Vol. 34, No. 10, pp. 450–485.

This method (Amer. Journal Vet. Med., 1912, page 245) is a good one. Putrified material can be used for the tests.

—

THE results of feeding moldy rice meal. Vet. Hertel (Münch. Tierärztl. Wochenschr. 1911, Vol. 55, No. 6, p. 89.)—After taking moldy rice meal, the animals showed a toxic exanthema, accompanied by stiffness in the hind legs, slight fever, diminished appetite, diarrhea and vesicular eczema. A change of feed and local treatment brought about complete recovery.

—

CONJUNCTIVAL tuberculosis in a bovine. District veterinarian. Musemeyer. (Berl.-Tierärztl. Wochenschr., 1912, Vol. 28, No. 18, p. 320.)—A granuloma having the size of a hazelnut was found to extrude from the lower eyelid of a bovine. In the granuloma there were numerous sulphur-yellow stripes and small raised points. On making a closer examination of the same it was found that these formations, etc., were distributed over the entire conjunctiva. In the yellow foci numerous tubercle bacilli were detected. After the animal was slaughtered the internal organs were found to be diseased.

—

INFECTIOUS inflammation of the hoofs of sheep by District Veterinarian Oppermann. (Berl. Tierärztl. Wochenschr., 1912, Vol. 28, No. 16, p. 283.)—The author recommends in outbreaks of this kind: (1) To isolate the affected sheep; (2) to remove the upper layers of dung in the stalls; (3) to spread a layer of peat (this, of course, will only apply to neighborhoods where peat is available) mixed with sand and saturated with creolin water over the floor and where the dung has been removed; (4) to remove the undermined horny portions of the diseased hoof and to paint them thoroughly with a three-percent pyoktanin solution and the application of tar which contains ten percent of copper sulphate. Painting with a mixture of alcohol and carbolic acid (3 : 1) is also good. In an epizootic the author made the animals pass through a 10 cm. deep box which contained to a height of 5 cm. a mixture of peat, woodtar, creolin, milk of lime and copper sulphate.

—

THE agglutination test in the diagnosis of bovine contagious abortion. J. McFadyean and S. Stockman (Jour. Comp. Path. Therap., 1912, Vol. 25, No. 1, pp. 22–38).—As a result of examining the blood of nearly 700 animals with the agglutination test, the authors believe that the test has passed the experimental stage and should now be employed in routine work for diagnosing this condition.

—

ON AN epizootic among cats supervening on and simulating distemper. J. P. McGowan. (Jour. Path. Bact., 1912, Vol. 16, No. 2.)—In a series of cats which had distemper and another series from which the distemper organism could be obtained from the nasal secretion, severe symptoms only set in after a secondary infection with a diplococcus was obtained. With the advent of the second organism the distemper organisms vanished.

A CASE of hemophilia in a bovine, by A. Guillabeau (Virchows. Arch., 1912, Vol. 207, No. 1, p. 137).—A young female bovine was injured with a tattooing forceps to the extent that it had nineteen small, one millimeter large skin wounds, which bled slightly. This bleeding could not be stopped and resulted in the death of the animal after twenty-nine hours.

—

INVESTIGATION in regard to the action of 606 upon fowl spirillosis. By A. Hauer. (Centralbl. f. Bakt., etc., 1912, Vol. 62, No. 6, pp. 477–496; Abt. I, Orig.)—Salvarsan was found to be an excellent remedy for the spirochetes of fowls contained within the animal body. Out of thirty animals having the disease twenty-eight, or 93.3 percent, responded to the treatment, while out of fourteen non-treated animals, chickens (controls), five remained alive (35.07 percent). The nominal lethal dose of the preparation was 0.3 Grams and the maximal tolerating dose was 0.15 Grams.

For curative purposes the author employs 0.03—0.002 Gms. A single injection of an average dose produced a decided improvement in a short time, and brought about a cure. Salvarsan also confers an immunity which lasts quite some time. No secondary effects were noted with the drug. This gives it a decided advantage over others.

—

CLINICAL investigations in regard to the hemoglobin content of blood. G. Hoffman (Inaug. Diss. Giessen, 1911).—The heomglobin content of the blood of the dog is much lower than that of man, higher than that of the horse, while the hemoglobin content of the rabbit is lowest of all.

The age and size of the horse and dog are not influencing factors as regards hemoglobin content to the extent which they are in man.

The daily variations, however, in the case of dog and horse are the same which occur in man.

Almost invariably after taking food the amount is lowered; but one hour after the time of feeding it reaches a point above the normal level. The protein content of the feed has some effect upon the amount of hemoglobin in the blood; it produces an increase. After giving much fluid its amount is lessened while a loss in fluid will show an increase.

—

INVESTIGATIONS in regard to narcotics and anesthetics, O. Gros. (Arch. f. exper. Pathol. u. Pharmak., 1912, Vol. 67, No. 2, pp. 132–136.)—This article deals with the anesthetizing properties of the various Novocain salts. Corresponding to the theory, it was found that the salt of an anesthetic acts in proportion to the amount of hydrolized salt or free base present in the solution. It was further noted that the presence of an excess of the sodium salt (in Novocain bicarbonate and novocain phosphate) will stimulate the local anesthetizing properties of a novocain salt containing a weak acid radicle considerably. The reason for this lies in the fact that an excess of sodium bicarbonate or sodium phosphate will raise the concentration of free base and furthermore will counteract the influence of the free acid, which is produced by the introduction of the novocain base into the nerves. These results also apply to eucain, alypin, etc. Novocain in a two-percent solution is recommended to be made as follows: Sodium phosphate, 3.5 Grams; novocain, 2.0 Grams; distilled water, q. s. 100 Grams.

—

INVESTIGATIONS in regard to narcotics and local anesthetics. O. Gros. (Arch. f. Exper. Pathol. u. Pharmak., 1912, Vol. 67, No. 2, pp. 126–131.)—Solutions of the cocain base showed a stronger anesthetizing power than solutions of cocain chlorid. The solutions of the base are, however, very easily decomposed, at room temperature. If a 1 : 800 normal solution of the base is to be prepared, the greater portion of it is decomposed before the last particles are dissolved. Heating for the purpose of accelerating the solutions quickens the destruction of the base.

This work also shows that solutions of stronger hydrolized cocain salts are less stable than the hydrochlorid. With the more stable anesthetics (alypin, novocain) it is easier to observe the more pronounced

activity of the bases as compared with their respective chlorids.

—

GASTROPHILUS larvæ as a cause of colic. Seegert (Zeitschr. f. Veterinark., Vol. 24, No. 2, pp. 93–95).—Although many have declared that gastrophilus larvæ are without significance for colic in horses, the author had a case in a four-year-old horse which had been pastured the entire summer. The symptoms present consisted of increased intestinal activity associated with intermittent colic. After giving various kinds of treatment, capsules containing bisulphide of carbon; two capsules containing eight Grams of carbon disulphide every two hours (six capsules were given in all) were given. These were followed up finally with twenty-five Grams extract of aloes. The animal after a time threw out 200 gastrophilus larvæ with the feces. Since this a total recovery set in.

—

TREATMENT of tetanus by magnesium sulphate, carbolic acid, and by antitetanic serum, by J. Camus (Compt. Rend. Soc. Biol. II [Paris], 1912, Vol. 72, No. 3, pp. 109–112).—Experimental therapeutic studies which were conducted on dogs showed that neither the intradural injection of magnesium sulphate nor the subcutaneous injection of carbolic acid will prevent the onset of tetanus. Magnesium sulphate, however, has a momentary effect upon the spasm, etc. Carbolic acid may act antiseptically toward the tetanus bacillus, but against the toxin and its fixation in the central nervous system it is powerless. Large doses of both these drugs are not directly harmful.

The serum method was found to have a decidedly greater influence upon the process.

A test was also made with an antitoxic serum which had previously been digested with pepsin. This was done for the purpose of obtaining a more active preparation. The results obtained, however, were unconcordant.

—

THE bacteriological methods for examining milk. G. Rühm. (Zeitschr. für Fleisch- und Milckhygiene, 1912, Vol. 22, No. 5, pp. 142–148.)—This is a description of methods for the bacteriological examination of milk. It includes methods for sterilization, preparation of media, the preparation of pure cultures and investigation of the same, and for staining bacteria. Special methods for detecting mastitis organisms, pyogenic organisms, actinomycosis, etc., are included.

—

CLINICAL and experimental investigations in regard to the value of Areca seeds and kamala in helminthiasis. C. Hoelt. (Inaugural Dissertation Giessen, 1911.)—Tests were conducted with forty-six dogs and seven rabbits and with and without retention of food. The following conclusions were drawn as a result of the investigation.

1. Areca nuts and kamala when given in conjunction with castor oil capsules are very active worm expellants, etc.

2. The results obtained with these remedies are greatly dependent upon the methods of pretreating the animals.

3. The best pretreatment consists of giving the animals a milk diet, until the feces assume a pasty consistency. The drugs in capsules are given in the morning and must be preceded in half an hour by a half ration of milk. Vomiting seldom results.

4. Previous starving or the administration of the remedy on an empty stomach has, when compared with the milk method, certain disadvantages.

—

THE toxicity of salvarsan when giving the same intravenously to dogs and rabbits by H. Kochman, (Münch. Med. Wochenschr., 1912, Vol. 59, No. 1, p. 18).—On administering 50 mg. per kilogram of rabbit a transient albuminuria is produced, with 70 mg. it remains for a long time, while 100 mgs. are lethal. On autopsy an inflammatory condition of the alimentary tract was noted. For rabbits the toxicity of this preparation was less than for dogs.

The lethal dose of arsenic for rabbits when giving salvarsan is 34 mg., in giving potassium arsenate 4.56 to 5.3 mg. per kilogram of body weight.

POINTED OPINIONS ON LIVE TOPICS by Readers of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Wound Applications That Are Practical

WHILE aseptic surgery is ideal it is far beyond the attainment of the country practitioner, in a location such as this where the farmers clean their stables but once a year.

Undeniably all antiseptics irritate wounds and retard healing; but their use is imperative, and furthermore the dressing must be as simple as possible to apply, and should require but little of the attendant's time. For as a rule elaborate directions will not be followed.

Each year I use less bichloride and more tincture of iodine, which is I think the best application for the great majority of wounds, both surgical and accidental. Applied once a day with a swab or syringe and later every second or third day, its effects are most satisfactory. The pain its application occasions is ephemeral. By its use we obtain most of the benefits of iodoform, without the offensive odor and at far less expense than we could use the powder. An application of fish oil, 100 parts, oil of tar, 50 parts and carbolic acid, 1 part or the common "black oil" a petroleum product will protect the wound from flies. Either one is very inexpensive and effective. Paint around the wound with one of the above three times a day.

Iodine is most excellent for the general purposes of the country practitioner whose methods must almost always be more or less rough and ready. It is a useful application to the points of sutures, for sterilizing a line of incision, and as an application to many forms of contused as well as lacerated, punctured and incised wounds. The above refers alike to wounds in muscular, tendinous and osteous structures. Under this treatment large and deep wounds will remain practically dry if made under reasonably good aseptic precautions.

For wounds in the oral, abdominal and the other natural cavities, hydrogen dioxide is my favorite, either full strength or diluted and used *ad libitum*.

For surface wounds and where it is desirable to produce a dry scab as quickly as possible, as in "broken knees" there is nothing else equal, I believe, to tannoform; for persistent urachus this is also very valuable, often relieving the condition in forty-eight hours, if applied every three hours to the umbilicus in sufficient quantity to cover the area rather thickly.

For surface wounds where the cost of the dressing is more of an object, either Mulford's or Parke, Davis and Company's dusting powder often answers well. All of the above dressings are most efficiently and economically applied by means of the small insect-powder blowers to be obtained from druggists.

Pulverized copper sulphate quickly destroys the excessive quantities of granulation tissue so frequently found in old and neglected wounds.

As a protective dressing to open wounds that are suppurating but little and in seasons of the year when flies are bothersome the following prescription does very well. It

is particularly applicable to wire cuts and other lacerated wounds.

Phenol.....oz. 1
Gum camphor.....oz. 5
Resin .....oz. 1
Methylated spirits.....ozs. 15

M. Sig. Paint on wounds three or four times a day.

A. W. WALDRON, JR.

Tullahoma, Tenn.

A QUESTION OF REVERSION

In answer to the article in the June issue of the AMERICAN JOURNAL OF VETERINARY MEDICINE by Dr. H. W. Boyd, under heading "Extrauterine Influence," I will say that the color of Kerry cattle is not uniform. According to Professor Thomas Shaw, the color most in favor is a rich black with, in some instances a ridge of white along the back and a white streak under the belly, but some are black, brown, black and white, and brown and white. It seems probable that the case in question is one of reversion, that is, a resemblance to a comparatively nearby ancestor on either the side of the sire or the dam. In view of the existence of white in many families of the Kerry cattle, it is not strange that an occasionaly black and white calf appears as the progeny of pure black parents. The old theory based upon extrauterine influences as factors in determining the color of the hair coat, to which Doctor Boyd alludes, has been effectively exploded by scientific research.

F. B. HADLEY, D.V.M.

Madison, Wis.

HEALING OINTMENT

I submit the following for the treatment of cracked heels:

1. Quinine sulphate.....grs. 40
   Hydrochloric acid, q. s. to dissolve.
2. Lanolin.....ozs. 4
   Cera alba.....ozs. 2
   Ol. Arnyg. Dulc.....ozs. 6
   Campho-Phenique.....ozs. 10
3. Absolute alcohol.....1 part
   Lead acetate.....oxs. 4
   Liq. plumbi subacetat.....ozs. 2

Melt No. 2 in water bath and add No. 1 and No. 3 slowly. Keep stirring until cool. Keep in amber-glass jars.

A NEUROSIS OR A TRAUMATISM?

Has any member of the profession ever seen a case like this?

A brown gelding, six years old, was purchased and used for over a year as a family horse, in the country, and he *was* a genuine family horse, until one day last spring, a year ago, while being used in the field by a small boy, he stopped to strike and paw with the front feet. After the noon meal he was again sent to the field but on the following morning while being harnessed became unmanageable.

It was noticed later that every time any one or anything touched him on the left shoulder he would almost go crazy and was very dangerous to handle. If in the pasture where he was turned last summer for some time, he touched the shoulder against a tree or fence, he would have a frantic spell and run about the field and over anything in his way.

The spot which seems to hurt him, when touched, is about at the junction of the middle and the upper thirds of the scapula, a little back of where the collar sets. There is no sign of anything like a growth, and no heat in the parts. Not a hair has ever been disturbed so far as one can see. He is a good puller and works every day now, having been given to two brothers to work, who haul tools and machinery for a gas company. They twitch him and have to get in the manger to get the harness on him, otherwise he would hurt someone.

For a time after starting out he switches his tail and throws his head just like a horse will when the collar is pinching a little, then cools down and works all right; but when the spot is touched, he gets very bad and acts like a crazy horse, otherwise you would not know there was anything wrong.

Can any brothers in the profession recall anything like it or similar, or suggest a treatment for the case?

H. S. RICHARDS.

Pittsburg, Pa.

PERHAPS DUE TO AN OLD STRAIN

I have a fine driving mare, five years of age, that has an enlarged pastern and fetlock joint of a year's standing in the left hind leg. She does not go at all lame. The swelling extends a trifle above the fetlock joint. It is reduced by hard driving but becomes much stocked after standing for a few hours. Will some reader kindly outline a good treatment for it? I have used a number of different treatments, but none has done much, if any good. There is no heat, pain, or tenderness, only the swelling.

I am a reader of the AMERICAN JOURNAL OF VETERINARY MEDICINE and find it a journal that is worth much to the veterinary profession. Every doctor should have it to keep in touch with the profession.

J. M., D. V. M.

—Illinois.

INTESTINAL TWIST WITH FATAL RESULT

July 30, 1911, I was called to see a five-year-old draft mare that had been sick for about six hours. When I arrived she was in a great deal of pain and greatly bloated. She received a capsule containing ammonium carbonate, four drams, and fluid extract of nux vomica, two drams, followed by a second capsule containing aloin, four drams, and calomel, one dram. I then removed the gas from the cecum with the trocar. After this she received one grain of arecoline hypodermically but showed no action from it. Another grain of arecoline forty minutes later showed the same results. By the use of the stomach tube the animal received immediately two quarts of hot lard. During the day she received five grains of arecoline and three grains of eserine, but without effect. During the day and the following night she received at four-hour intervals both heart and nerve stimulants.

The next morning when I returned I found the animal in about the same condition as the night before, but some weaker. I gave one grain of arecoline intravenously, with negative result. An hour later another grain was given in the same manner with the same result. The animal died about five o'clock that evening. An autopsy showed a twist in the small intestines.

W. H. SPENCER, V.S.

Yates Center, Kan.

INFLUENZA WITH COMPLICATIONS

The necessity of keeping up an active state of the bowel in the treatment of febrile diseases, has no doubt entered into the consideration of every practitioner. The case I have selected here will serve to demonstrate that it is well to continue laxative treatment until the patient is well into the recuperative stage.

A sorrel gelding, three years old and weighing 1000 pounds, was driven ten miles with a load of household goods, as a leader of a four-horse hitch and allowed to stand and feed for an hour or more, then driven back home. The weather was raw and cold and the roads were heavy. The next morning this horse was found without appetite, profoundly prostrated and with puffed eyelids. I was sent for and found the temperature 105° F., pulse accelerated, but strong and full; respiration about thirty-five; very little icterus of the mucous membranes; absence of respiratory murmur along the lower border of the lung, all four legs stocked slightly but felt warm to the touch.

My diagnosis was, influenza with pulmonary complications. I administered nux vomica, one dram, and alcohol, two ounces, every three hours, and gave immediately two capsules containing dried sodium sulphate, one ounce, and calomel, thirty grains, each. The feed consisted of bran mashes and ground-feed slops.

I called the next day and found the temperature 103° F., pulse and respiration improved, appetite better, feces pultaceous, in short, the animal was greatly improved. I made a favorable prognosis. The nux vomica and alcohol were continued every four hours and owner instructed that if there was any tendency toward costiveness to give six to eight ounces of Glauber's salt and a pint of linseed oil.

I was informed on the third evening following that the animal had been steadily

improving, but was now showing colicky symptoms; due, in the owner's opinion, to "stoppage of the water." I ordered one-half pound of epsom salt and a pint of linseed oil to be given at once and left instructions to inform me of the results in the morning. Word the next morning was that the animal was no better. I called and found all symptoms of influenza abated, but had an obstruction of the bowel.

Bearing in mind the irritability of the intestinal mucous membrane in influenza and the necessity of preceding with caution, I gave three ounces of epsom salt, one quart of oil, one-half grain of arecoline, one ounce of aromatic spirits of ammonia, and left oil, one quart, aromatic spirits of ammonia, oil of turpentine, of each two ounces, to be mixed and one-fourth given every four hours. Nux vomica and alcohol were still being given every four to five hours. I called again the next day. Animal being no better, I gave ammonium carbonate one ounce, arecoline one grain, and left arecoline, grains two and one-half, to be given hypodermically, one-half grain every forty-five minutes until relief was obtained. The animal died that afternoon. I have since, in cases of this kind, added one and one-half to two ounces of exiccated sodium sulphate twice daily, to be given throughout the disease or until a washy condition of the bowel is obtained.

HENRY HELL.

New Liberty, Ia.

INTESTINAL OBSTRUCTION FROM MELANOSIS

July 27, 1910, I was called to see an aged, gray gelding. He showed colicky pains and was greatly bloated. I gave him, in a capsule, ammonium carbonate, four drams, fluid extract of nux vomica and fluid extract of gentian, of each two drams, and, hypodermically, arecoline, one grain, and withdrew the gas from the cecum with the trocar. I received no action from the arecoline, so it was repeated in forty minutes with the same result. An enema was given of warm water and soap, which succeeded in removing a few hard balls from the posterior bowel. The same evening the animal received aloin, three drams, and calomel, one dram; during the night at four-hour intervals he received both heart and nerve stimulants.

On the morning of July 28 I administered another grain of arecoline with negative effect. Through a stomach tube the animal received two quarts of raw linseed oil. At four-hour intervals he was receiving fluid extract nux vomica, two drams, fluid extract of belladonna, one and one-half drams, and fluid extract of digitalis, one-half dram. In the afternoon of the 28th he received one grain of eserine hypodermically with no apparent effect.

On the morning of the 29th he received one grain of arecoline intravenously and during the afternoon two grains eserine, but all to no purpose. He died August 1.

On autopsy I found a melanotic tumor within the lumen of the small intestines, slightly larger than a hen's egg. Just anterior to the tumor was a fibrous band closing the lumen.

W. H. SPENCER, V.S.

Yates Center, Kan.

HOG CHOLERA AND INFECTIOUS PNEUMONIA DIFFERENTIATED

In my opinion there is an infectious disease in hogs in this country that differs from hog cholera. The lesions of the two different conditions are briefly as follows: Hog cholera of the very acute type is characterized by lesions similar to those found in any septicemic disturbance. That is, an enlargement of the spleen, and hemorrhages in the various body tissues. In the less acute type the septicemic lesions are evident, and in addition there will be noted more or less hemorrhages in the kidneys, lungs and other visceral organs. In the chronic form of the disease intestinal lesions are noted with more or less of the aforementioned lesions. The intestinal lesions are variable but usually assume the form ordinarily known as the hog-cholera ulcer.

The other infectious disease of swine I believe should be called infectious pneumonia, or pleuro-pneumonia. The dis-

ease is characterized primarily by pneumonia, the lesions of which vary from congestion to necrosis. The peculiarity of this condition resides in the fact that this area of the lungs is in different stages of disease. For example, one area will be hyperemic, another area will be in the stage of red hepatization, another area will be in gray hepatization, and still other areas will be necrotic. Thus the lung will have a mottled appearance; associated with the lung lesions there is invariably found a fibrinous pleurisy. The exudate in many instances are in sufficient quantity to cause adhesion of the visceral and parietal pleuræ. Occasionally there may be noted septicemic disturbances associated with this pneumonia.

The pneumonia in hog cholera differs from the pneumonia of the infectious type in the fact that hog-cholera penumonia is usually of the croupous type, the entire lobe or section of the lobe being similarly involved.

A. T. KINSLEY.

In a discussion at a meeting of the Illinois Veterinary Medical Association.

APOMORPHINE RELIEVES CHOKE

Having read an article in the May number of the AMERICAN JOURNAL OF VETERINARY MEDICINE on choke in a suckling colt, I will report a case of the same kind which may be of interest to some of your readers.

I was called to see a mule colt, six days old and quite small for the age, standing beside his mother. He showed all the symptoms of choke. The retching was severe and almost continuous. On palpation I found a small tumefaction about four inches below the pharynx, and seemingly in the esophagus. I tried to dislodge this by pressure from below, but could do nothing in this way. As I had already made a diagnosis of cervical choke I decided to try apomorphine, so gave a hypodermic injection of one-twentieth of a grain of the hydrochloride and sat down to await results.

In about ten minutes the colt seemed to get very sick, appeared to try to vomit, broke out in a profuse sweat and exhibited the symptoms of colicky pains; in a few minutes more he coughed, throwing out a small piece of a corn cob, which I feel sure caused the tumefaction in the esophagus, as this had disappeared a short time before.

I have never used apomorphine in the treatment of choke in larger animals, but as the colt made a fine recovery I shall try it again. I should like to hear from some who have used it; the symptoms produced. They were quite alarming in this case. Was the dose of one-twentieth grain too large?

F. F. MEADS, D.V.M.

Burr Oak, Kan.

WOUND DRESSING

When I make an incision, other than for the opening of a sinus or an abscess, I use a dressing of boracic and tannic acids, for two reasons: I want to protect the wound against outside infection and I want the skin and stitches dry so that, barring infection while operating, I shall have healing by first intention. The same applies to accidental wounds that are fresh and can be advantageously stitched.

Where there is pus already in the wound, I use no antiseptics or dressings, except possibly for the first cleansing, or rather washing out, and then my hobby is a light wine-colored solution of potassium permanganate or a normal salt solution. In this class of wounds, bacterins or nuclein or both, get me the results and I let the wounds alone. Simply cleansing around the wound, taking care to keep the discharge from getting in and on the hair as far as possible.

In the case of freshly punctured wounds, if deep, I give antitetanic serum, and, of course, bacterins, and let the wound alone with as good drainage as it is possible to give it.

Occasionally a wound with exuberant granulations needs tannic acid or some styptic even as strong as stibium chloride to hold it in check.

Possibly a better idea of my wound dressings can be had from the following cases

and the time required for their recovery with the treatment used then from the foregoing description.

CASE 1.—A mare, six years old, fifteen and one-half hands tall, weight 800 pounds. May 6, 1912, she received a deep wire cut on inferior surface of the right upper arm just under the pectoral group, which severed the flexors to such an extent that movement was quite "draggy." The wound measured from the elbow forward eight inches. Two stitches were taken in front and two next the elbow. Not however until after two quarts of weak permanganate solution was used to thoroughly wash the wound. The initial dose of bacterin was given and the limb ordered kept clean but "do not wash the wound." The stitches were torn out the second day when she laid down. This animal received four injections of bacterins and as wound dried on either end an ointment of lanolin and tannic acid was applied.

Swelling in the limb never became alarming, and on May 22 there was practically none, and she went down into the pasture field on a very fair trot with the wound no more than four inches in length. At this time she was seven days overtime for the delivery of a colt.

CASE 2.—A gelding, nine years old; sixteen hands tall; weight 1100 pounds. A nail was removed from this horse's foot, October 30, 1911, and the next morning he was not able to walk without hopping. I was called and found him in extreme pain, unable to put his injured foot to the ground, temperature 102° F., respiration twenty-six, pulse sixty-eight, appetite nil. I removed the shoe, explored the foot and found another nail, an eight-penny wire, penetrating the frog and directed toward the navicular joint; when pulled out, synovia followed it. I made wound larger for the sake of drainage, placed the shoe back on with two toe nails, packed absorbent cotton in sole with nothing on it whatever and injected 1500 units of antitetanic serum and the initial dose of bacterin. I gave one-half ounce dose gelsemium every three-quarters of an hour for two days until the animal was apparently over the acute pain.

The owner provided the animal with a roomy box stall, plenty of straw for bedding, mashes and good alfalfa hay. I administered bacterins every four days in increasing doses for six doses with two more decreasing five days apart until the animal went back to the street bus, making his trains as usual, except that he is somewhat "clubby" with that foot. There was no abnormal horn growth and the foot is now as near like its mate in size and shape as it ever was.

There is no doubt in my mind but that this animal deserved resection of the plantar aponeurosis, but conditions were not at all convenient for this operation, and nursing of the proper kind was out of the question, so the procedure as mentioned above was adopted.

The shoe used, I have described before. It is one with the heels and toe so penetrated that a metal sole plate can be taken out and dressings replaced at pleasure. The plate also acts as a protection to the sole long before the wound has closed, thus enabling the animal to resume work sooner than it could without this protection.

CASE 3.—A gelding; six years old; sixteen and one-half hands tall; weight 1250 pounds. Presented April 29, 1912, in great pain, temperature 103° F., respiration twenty-two per minute, pulse seventy-two, appetite nil. A severe contusion showed on the anterior part of the right hind fetlock.

Owner led him into the blacksmith with the history of his having been all right the night before, and came out of the barn almost on three legs. He said that he had a "bump" on both sides (of extensor pedis) and a neighbor told the owner he could take that off with Sloan's liniment, so he blistered the swellings. The animal was wet with perspiration from pain; the swellings being very tense.

I opened the swellings on both sides, gave bacterins, and sent him home with a cooling lotion of ammonium chloride and potassium nitrate, to apply. Also one-half ounce of gelsemium every three-quarters of an hour. The next day he was much easier and was put out in a grove and let "go to grass."

May 4, the animal was badly gaunted up, but was cheerful and bearing a little weight upon the limb. At this time the owner acknowledged that he had caught his leg in the gate the night of April 28. A slough had occurred, the size of a dollar, on the antero-internal and external faces of the fetlock. The contiguous parts were ordered cleaned, "but leave the wound alone."

On May 18 this animal went into the harrow for a half-day and was no worse for the work, on the day following, so was allowed to go on, and he was plowing sod and going sound on the 22nd, when I last saw him. At that time the wound was filling fast and appeared fine and healthy. Cotton was applied when in the barn, simply for protection, and as the granulations showed a disposition to fill out too far I prescribed tannic acid as a dry dressing. He received bacterins every four days in increasing doses from the beginning. E. M. BRONSON.

Hartford City, Ind.

ATROPHY FROM AZOTURIA

April 28 I was called to a client's place, and on arrival I found a 1400-pound, black horse down in the barn. The owner had driven this horse about two miles, when he showed the usual symptoms of azoturia, sweating, trembling and weakness of right hind leg. On examination of the urine I found it very much darkened; the gluteal muscles were very hard. I diagnosed the case as azoturia, gave my usual treatment and waited about two hours. The horse got up with much difficulty. He ate some and went down again in about thirty minutes.

I left some medicine to be given and directed the owner to call me if anything out of the usual occurred. May 1 my client came in and got some more medicine and said the horse was doing nicely; except that when he walked the weight could not be borne on the affected leg. May 15 I was called back to this horse. He was out picking grass along the road, and up to this time had not been able to support his weight on the right hind leg, acting as though there is a partial paralysis. There is no atrophy of gluteal muscles whatever. He picks up this leg, abducts it somewhat, and extends it forward, but when weight comes on it there is very little weight supported. I have used blisters with negative results. I shall be thankful for a line of treatment that can be used on this horse with beneficial results. C. BURBRIDGE, D.V.S.

Carlyle, Ill.

—

[It would appear that this case is of partial paralysis and atrophy of the muscles of the crural group—a common enough sequel of azoturia—believed to be due to a paralysis of the trophic nerve to these parts and requiring for recovery a regeneration of the axis cylinder of this nerve, which always takes more than three months and less than eighteen months; blistering, exercise nor any other treatment appears to have any effect in either hastening or retarding the recovery of these muscles.

It is to be remembered that in azoturia affecting the hind quarters, although the gluteal muscles show much swelling and induration, their action is but little affected during the acute attack or subsequently, nor do they atrophy, except slightly as a result of lack of exercise, because of the extreme atrophy of the crural group. It is the latter, though they are neither tumefied or indurated, that are concerned in the animal's inability to stand during a severe attack of azoturia, and also in the extreme and stubborn atrophy subsequently.

A postmortem examination of a horse dying during an acute attack of azoturia, reveals the gluteal muscles, when affected, greatly congested and almost black in color. On the contrary, Dr. E. L. Quitman claims to have found before death the tumefied gluteal muscles of a straw color and so anemic that inconsiderable hemorrhage results from incisions several inches long and of a depth of three inches.—ED.]

COARSE PROVENDER CAUSES FATAL IMPACTION

October 10, 1911, I was called to see an aged black gelding. I found a case of impaction colic. His ration for the past month had been cane and kaffircorn hay.

He showed intense pain, which was relieved by giving orally two ounces of chloral in capsules. He then received a capsule containing aloin, four drams, and calomel, one dram. As soon as he became quiet the stomach tube was passed and two and one-half quarts of raw linseed oil administered. At three-hour intervals he received both heart and nerve stimulants. The following day the animal received five grains of arecoline in one-grain doses, but got no action from it. He died the following night.

On postmortem examination I found a rupture of the large intestine and its contents firm and dry.

W. H. SPENCER, V.S.

Yates Center, Kan.

COLIC AND AZOTURIA SIMULATANEOUSLY

I had a peculiar case the other day, one of azoturia accompanied by acute gastric disturbances; in fact, on first noticing the case, I thought it simply a case of acute indigestion. This case, a mare, was brought to the hospital scarcely able to breathe and almost smothered down. She lay down before we could get her into a stall.

I had my stomach tube all ready for use, since I had just finished washing out a colicky horse. I led the now recovering colic case out of the chute and tried to get this one up and into it. She paid no more attention to whipping than if we were hitting the ground, not a muscle seemed to respond to the whip; it seemed she would lie there and die. I made another effort, though, by whipping her on the legs, when she jumped to her feet apparently with little trouble. She showed some stiffness of hind quarters, but walked right off. On passing the tube I removed at least two gallons of solid feed, bran, corn chop and oats (this being her regular feed) and plenty of fluids. This relieved the awful distress of breathing, and on walking her out of the chute, I noticed her more closely and saw to my surprise that she had azoturia. Of course she was wet, sweating and all that, but from the distress of the animal I did not think at first of azoturia.

After washing out the stomach, the bloat went down nicely. I catheterized her and administered arecoline, one grain, and strychnine, one-half grain. In about an hour and a half the mare was laying easy, apparently asleep. A dose of raw linseed oil was given after three hours. She got up about an hour later and made a very rapid recovery, going home the second day.

This surely is a peculiar case, yet I really believe that in many of these cases of azoturia if the stomach were emptied better results would be secured from the treatment.

D. O. KNISELY, D.V.S.

Topeka, Kan.

DESCRIBE the operation for bog spavin. What results are attained with this operation?

POSSIBLY FORAGE POISONING

Has anoyne else had a case like this? I was called to one and know of two others that were not thought to be serious enough to necessitate calling in help. The three cases did not occur at the same place or at the same time, but all were alike and all ended fatally.

All these cows had been milked for about three months, when very suddenly lactation would cease and they would swell between the front legs and down to the knees; the nose was dry. In every other way they appeared normal.

The cow I saw was eating with the herd, her milk flow stopped suddenly, she had been giving three gallons at milking. The udder appeared flabby, just as if she had been milked. I was called one week after these symptoms appeared and found her temperature 101° F.; respiration twelve; pulse eighty; bowels reasonably loose and the urine about normal. The brisket was swollen up tight and the front legs were swollen to the knees; the nose was dry. Everything else appeared normal. I gave the following: magnesium sulphate, six ounces, sodium chloride, eight ounces, and nux vomica, one and one-half drams at one dose, and ferrous sulphate, one ounce,

gentian root, three ounces, nux vomica, one ounce, and powdered potassium nitrate, two ounces, made into twelve powders and given on the tongue three times daily. I also directed the owner to bathe the swelling in warm salt water and afterwards to rub it well with camphorated oil.

There was apparently no change in the patient's condition, but on the fourth morning she was found dead. I did not hear of her death for over a week, so had no chance to hold an autopsy.

None of these cases seemed to have any pain or distress. I would be glad to hear if any one has had anything like this and the results of their treatment.

L. C. MIZNER.

Sequin, Wash.

SOURCE OF TUBERCULOSIS IN MAN

At the International Congress on Tuberculosis held in Rome, April 14–20, 1912, H. Kossel (Berlin) affirmed that consumption is almost invariably due to human tubercle bacilli, transferred from man to man. Infection through milk and meat is of relatively little importance.

Velée (Alfort) claimed that ten percent of human tuberculosis is due to bovine bacillus.

PROGRESSIVE NEW ZEALAND

In New Zealand every town of over 2,000 inhabitants is by law required to have a public abattoir and proper inspection of meat by a duly qualified veterinarian.

HYDROCEPHALUS—DYSTOKIA

I am sending you the photograph of a case of hydrocephalus, which may be of some value to practitioners. I found many complications in delivering this foal although everything was normal except the head. The head is seventeen inches wide, fourteen inches long and nine inches deep. The mother of this colt is a standard bred perchon, seven years old. She is in good health and working every day.

H. J. COGGINS, D.V.M.

Ilo, Ida.

Dr. H. J. Coggins' Case

TREATMENT FOR MASTITIS

G. C. Brown, New Hyde Park, Long Island, New York, asks for a treatment for garget in the May number of the AMERICAN JOURNAL OF VETERINARY MEDICINE. I would suggest the use of the following prescription.

White liniment.....ozs. 6½
Fl. ext. phytolacca.....oz. 1
Fl. ext. belladonna.....oz. ½
Mix.

Sig. Rub thoroughly into the udder two or three times a day.

In chronic mammitis or garget use the tincture of iodine one-half ounce instead of the belladonna.

E. C. W. SCHUBEL, D.V.S.

Emmittsburg, Md.

MILK FEVER FIVE MONTHS FROM PARTURITION

Last November I was called to see a grade Jersey cow. When I went into the pen where she was she was lying on her side with her head turned to the other side. All symptoms present indicated milk fever and I asked the owner when she calved. He said she was due to calve next April 15th. As I could make nothing else out of it I diagnosed her case as milk fever, inflated the udder and ordered her to have two drops of the fluid extract aconite every half-hour through the day. I saw her again the same night and she was lying up in a normal position and chewing her cud all right. She got up the following morning as well as ever and now

has a calf two days old by her side. If she did not have milk fever, what ailed her?

A. W. CHADWICK.

Damariscotta, Me.

INTRASPINAL INJECTION IN THE HORSE

These injections were made at a point between the first and second cervical vertebræ.

Dr. Louis P. Cook's remarks will probably best describe this procedure.

"So far as I know, therapeutic agents have not heretofore been administered in this way in veterinary practice. It occurred to me that the injection of tetanus antitoxin into the canal might be a way of curing tetanus. But before using the antitoxin in this way a series of experiments were conducted. Intraspinal injections were made on possibly a hundred subjects. Various agents, such as cocaine, stovaine, quinine-urea-compound, sulphate of magnesia, etc., were injected in various amounts to learn of their effect. The cord was also intentionally punctured to determine what effect such puncture would produce. Our experiments indicate that this operation is not attended with any danger. Slight punctures of the cord do no harm. They may cause some little disturbance for a day or two, but nothing serious developed with us even when the cord was jabbed pretty hard. In a few cases of tetanus we treated by the intraspinal injection of antitoxin the results were most remarkable. I suggest the use of the antitoxin in this way in all serious cases of tetanus."—Ohio State Vet. Med. Asso. *Year Book*, 1912—13.

EXPLANATION FOR UNUSUAL CASES OF RABIES

Complying with your request for a discussion of the cases of rabies reported on pages 250–251 of the June issue of VETERINARY MEDICINE, I was very much interested in the report of these cases, and first of all let me say that I am not familiar with the kind of treatment these animals received, that is, the 500 Cc. of some material injected intravenously. The ordinary Pasteur treatment, the material of which is an attenuated virus, is given subcutaneously, each succeeding dose having a slightly increased virulence over the preceding one.

Possibly I am not keeping up with this line of treatment, but I am rather familiar with methods used in the ordinary Pasteur treatment to prevent rabies in this section of the country.

The American Biological Company of this city have, during the last eighteen months, treated fifteen horses and mules that were bitten by known rabid animals, and thus far with 100 percent success.

Replying to the author's question, the best explanation of the fact that the animal which was most extensively lacerated did not become infected, may be that the extensive hemorrhage which succeeded the infection of the wound, cleansed it. Outflowing blood frequently cleanses a wound, as is well known. The other two animals, being less extensively lacerated, and the hemorrhage being limited, the wounds were not cleansed, in other words, the infection was not washed away, and the cases developed rabies. The period of incubation, however, is relatively short, but this is sometimes the case in equines.

The absence of negri bodies in the two that died may indicate that the vaccine used was sufficiently virulent to cause the disease for as you know the fixed virus cases have very minute negri bodies.

I should be very glad to receive further light on what was actually used in the 500 Cc. injection that was given these horses.

A. T. KINSLEY.

Kansas City, Mo.

THE JOURNAL and "Springtime Surgery" received. I have read both carefully and am well pleased with them. Any doctor is far behind who does not read the JOURNAL.

I consider each issue of VETERINARY MEDICINE as valuable as any textbook, the suggestions and practical ideas are well worth the time spent in reading. One who does not read is a back number, and that soon.

I take four veterinary journals, and VETERINARY MEDICINE is prized the highest. It gives ideas that cannot be gotten elsewhere.

L. KINGERY, V. S.

Bridgewater, S. Dak.

FOR CRACKED HEELS

J. F. Tavery asks for a remedy for cracked heels. My standard remedy is: Oxide of zinc, 1 dram; lard, or carbolized vaseline, 1 ounce.

H. C. MAXON.

Humbird, Wis.

INFORMATION WANTED

Please express your ideas of the tablet form of bacterins; as to results obtained from their use.

Have you used the "Solution of Hydrogen peroxide" in pneumonia? If so please give particulars of administration and results obtained.

J. W. HARBAUGH.

Corydon, Ind.

THE May issue is just received and surpasses my expectations. I think you are to be especially complimented on the stand you are taking for the good of the profession, and its economic good in general, especially in the pushing of proper legislative measures.

G. D. ELDER, '12.

Manhattan, Kans.

TRUSS PREVENTS EVERSION OF THE UTERUS

"Springtime Surgery" is a very handy, practical book, but I think would be improved by adding under the discussion of the everted uterus, directions for excising it with an ecraseur, in case it cannot be replaced. Take it off in two sections, after first examining to see that no intestines are in it. I use a rope truss made of clothes line when I replace the uterus of a mare or a cow. The truss is made by placing a collar on the mare or a strap on the neck of a cow, then running two ropes from the top of it over the back down past vulva and udder, forward between the forelegs to the bottom of the collar, then nearly join ropes just above and just below the vulva, then put ropes around the animal, one just behind the front legs and the other at the flanks, fastening the ropes to the ones running lengthwise to keep them in position, when the animal turns around.

B. F. WARD.

Morris, Ill.

VIVISECTION ACCEPTABLE

"As a general rule I am opposed to the horribly brutal practice of vivisection, in which living, conscious animals are tortured and butchered. But in the case in which a dog was used at the Academy of Medicine demonstration Monday night it seems that an anesthetic was used, that the operation was performed by a reputable physician with the view of making a really valuable contribution to humanity, and so I would not raise my voice against it."

This statement was made Tuesday by E. P. Bradstreet, president of the Society for the Prevention of Cruelty to Animals, after he had learned of the demonstration on a live dog given at the Academy by Dr. B. M. Ricketts. Mr. Bradstreet added: "I have read of cases where doctors subjected dogs and other helpless creatures to the most excruciating agonies and our Cincinnati Society for the Prevention of Cruelty to Animals has been corresponding with anti-vivisection forces at Chicago with the view of helping in this campaign against wickedness and brutality, this reversion to the methods of the dark ages. But I realize that where good men anesthetize an animal and thus prevent suffering, there is no reason to object to the research when it is likely that something valuable for humanity will be discovered."

THE VETERINARIAN AS A PUBLIC HEALTH OFFICER

In his lecture before the Texas Veterinary Medical Association, Dr. A. T. Kinsley, pathologist at the Kansas City Veterinary College, Kansas City, Mo., said in part:

"The conservation of the health of the people is a problem that seriously concerns the undivided attention of the best talent in every civilized nation. The progress of a nation is dependent upon the health of its people, and the intellectual attainments of the general population indicates fairly well the condition of health that is maintained by the inhabitants of the country. In other words, education of the public is pre-requisite in the establishment of effectual sanitary regulations, and the enforcement and maintenance of efficient sanitary laws is dependent upon competent, industrious public health officers. The existing state of the health of the general public of any community, commonwealth or nation depends upon the wholesomeness of the food supply and the control of the dissemination of the various disease producing microorganisms. The efficiency of a health official depends primarily upon his knowledge of the nature of foods and infective diseases.

"The evolution of the sanitarian from the old-time medicine man through the petty political stage to the present scientific standard, has been comparatively slow and it is possible that there are some unqualified officers still in charge of responsible positions. Before discussing the question of efficiency of veterinarians for public health officers, it is advisable to have an understanding of the qualifications of a veterinarian. In order that a veterinarian be eligible to the position of inspector in the bureau of animal industry of the United States department of agriculture, he must be a graduate of a college that gives a definite course of study prescribed by the department of agriculture. All such colleges maintain a curriculum that includes courses on pathology, bacteriology, meat inspection, milk and dairy inspection, quarantine and hygiene, subjects that are of especial importance to sanitarians, in addition to thorough courses in anatomy, physiology, medicine and surgery and the related collateral sciences. Men that complete such a course are equipped with the technical knowledge that is essential for a general health officer.

"The efficiency of a man is determined by his accomplishments. The veterinarians employed by the Bureau of Animal Industry inspected the carcasses of 49,179,057 animals from June 30,1910, to July 1, 1911, and their inspection was sufficiently efficient that these meat foods were accepted as import products in practically all foreign countries. During that time 113,742 entire carcasses were condemned, as well as 874,211 parts of carcasses. In addition, 19,000,000 pounds of meat and meat food products were condemned as unwholesome and unfit for human food. The significance of the

extent of these condemnations in the maintenance of the health of the consumer of meat food products cannot be overestimated. Many diseases and diseased conditions are of frequent occurrence in the carcasses of animals that are slaughtered at the time or shortly after they were affected with high temperature, is unfit for food, because of the production of chemical substances that are injurious to the health and sometimes disastrous to life.

"Less than one-half of the meats and meat food products slaughtered in the United States is subjected to Government inspection. Much of the meat is killed by the butcher in the smaller cities, towns and villages and is not inspected. Some provision should be made for the supervision of the

A. T. Kinsley, M. Sc., D. V. S.

small-town slaughter houses and the inspection of the animals killed therein by a competent health officer.

"Some second class and many first class cities have a force of veterinarians who devote all or part of their time in inspecting slaughter houses and meat food products of the butcher shop. These officials frequently condemn carcasses or parts of carcasses as being unwholesome and unfit for food, and it is seldom that butchers and meat dealers dispose of any meat or products thereof as being unwholesome and unfit for food unless it is officially condemned; however, these dealers should not be censured for not detecting spoiled foods or diseased flesh, as recognition of such conditions, at least in many instances, is possible only by one skilled in this particular line.

"Aside from meat inspection duties, veterinary employees of the Bureau of Animal Industry have, in cooperation with State authorities, successfully eradicated the Margarapus annulatus, the fever tick, from 57,520 square miles of infested territory during the last year. They have also diminished the infested area of scabies of cattle by 50,000 square miles and the infested area of scabies of sheep by 390,000 square miles. Other bureau veterinarians have safeguarded the live stock industry of the United States from the importation into our country of such diseases as surra, rinderpest and foot-and-mouth disease, which is of no small financial concern to the animal husbandry of our country.

"Many veterinarians employed as sanitary officers for the various states in the Union have accomplished much in the preservation of the health of animals of their respective states and indirectly of the people. Other veterinarians have rendered efficient sanitary service to many towns and cities in the capacity of milk and meat inspectors. The principal benefits obtained by city milk and meat inspection have been in the betterment of sanitary conditions and the maintenance of health of the human. No small part of the health in general of the live stock of the United States, and indirectly of the health of the people, should be attributed to the ever watchful local veterinary practitioner who efficiently safeguards his community from the ravages of such diseases as cowpox, anthrax and rabies.

"There are many diseases of the lower animals that are common also to the human, and the veterinarian is certainly best qualified to identify these diseases in the animal and to properly quarantine, destroy, disinfect and prevent the spread of such diseases to man. About 150,000 humans die annually in the United States of tuberculosis. That tuberculosis is transmissible to man from lower animals is now an accepted fact by practically everyone. The New York Board of Health in a recent report states that a large percentage of infant tuberculosis and that about two percent of adult tuberculosis is of bovine origin. It has been further shown that about ten percent of articular tuberculosis of the human is also of bovine origin. Milk sickness, a disease primarily of cattle, and which is also transmissible to man, made its appearance in New Mexico three years ago.

"Malta fever, a disease of goats—transmissible to the human—is very common to the countries bordering the Mediterranean sea, and this disease, has recently been identified in Texas.

"The medium through which the human obtains the infective microorganisms causing tuberculosis, milk sickness and Malta fever is invariably milk. The prevention of the transmission of these diseases to man is dependent upon the identification of tuberculosis or milk sickness in cattle and Malta fever in goats, and the prohibition of the use of milk from any animal affected with any one of the above diseases; the establishment of a proper quarantine, and the final disposition of the diseased animals or carcasses and disinfection of the premises. A man capable of tuberculin testing cattle and interpreting the results and capable of diagnosing milk sickness and Malta fever in the milk-supplying animals, is alone efficient as a milk and dairy inspector.

"Rabies is a common disease to the domestic animal and man, and is readily transmissible by means of the saliva and other secretions. Anthrax is another disease that affects practically all mammals, the infection of which is readily transferred from animal to animal through wound inoculations and possibly also by milk. Cowpox and foot-and-mouth disease are diseases of animals that are capable of being transmitted to man through milk. The above named diseases being common to the domestic animals are diagnosed and efficiently controlled by one versed in comparative pathology, that is, a veterinarian.

"Milk and dairy products are now extensively used as human food, in fact, from one-fifth to one-sixth of the food consumed by the people of the United States is derived from the dairy cow. There is probably no one who has a knowledge of milk, the sources of its contamination, the changes which it undergoes after leaving the animal, better than the veterinarian. It is found that milk is frequently a carrier of diseases infective to man only. Milk-borne typhoid fever is credited with about 100,000 cases of this disease annually in the United States, of which 15,000 to 20,000 die. Scarlet fever and diphtheria are easily and frequently transmissible through milk. Through milk-borne endemics these two diseases are paying a heavy death toll annually. The great loss of human life in the United States today is due to enteric disturbances of babies, caused by impure or unwholesome milk.

"It must not be understood that the veterinarian alone should be responsible for the preservation of the health of the public. The various phases in which the veterinarian is and should be a factor have been briefly discussed, but the conservation of the health can be brought to the highest standard only by the cooperation of the physician and the veterinarian. Each has his field, although they essentially overlap. For example, when the physician finds any case of Malta fever, infantile intestinal tuberculosis or other disease that may be milk-borne, he should consult the veterinarian and obtain his cooperation in determining the source of the infection and thus prevent further extension of the disease. On the other hand, if the veterinarian finds rabies or other disease transmissible to the human prevalent in any of the domestic animals, he should consult with the physician and advise as to the best means for prevention of infection in the human. Such freedom will be of untold benefit, and, if carried on as suggested, it will be the cause of establishing a new standard of health.

"In summarizing, it is very evident that the veterinarian, is naturally the most efficient of sanitarians in the maintenance of health of the domestic animals. It has been further shown that many of the diseases of animals also affect the human, and in view of the fact that there are many human diseases and diseased conditions that have their origin in the domestic animal or in the products of these animals, it seems self-evident that veterinarians should continue to act in the capacity of health officers, especially as meat and milk inspectors, and every well regulated board of health should have one or more veterinary members."—*Houston* (Tex.) *Post.*

Enclosed find two dollars, for which please continue to send your veterinary JOURNAL. I am always pleased to receive it and couldn't think of letting my subscription lapse. I certainly wish you a successful year. I did not get around in time to secure it at the one-dollar rate for five years, but nevertheless it is worth the present price and I am quite willing to pay it.

F. E. ROMIGH, D.V.S.

Cottonwood Falls, Kan.

FAMILY OF VETERINARIANS FOR MORE THAN A CENTURY

It is seldom that a family is found where from generation to generation for one and a quarter centuries they follow the same profession or occupation. Usually a man thinks some other occupation or profession is better than his own and therefore encourages his son to take up some other line of work. Yet the Deadman family, of which Dr. C. A. Deadman, of Madison, is a member, have been veterinarians since 1787, a most remarkable record.

Dr. Deadman is one of eight brothers, all of whom are veterinary surgeons. Dr. Wm. Deadman practiced in France and in England as early as 1787. His son, Dr. Jacob Deadman, was the first veterinary surgeon in the army of Great Britain in 1828. His son Wm. H. Deadman, came to America in the year 1850 and practised in Toronto, Canada, before the Toronto Veterinary College was organized. He is the father of eight sons, all of whom are practising veterinary medicine in Michigan, except C. A. Deadman, who for ten years has been located at Madison.—*Observer*, Oregon, Wis.

"PUTTING ONE OVER" ON A CHICAGO INSPECTOR

I recently took occasion to inquire into the Omaha milk supply. I found that they had a low infant mortality and, quite expectedly, under these circumstances, found their milk exceptionally fresh and clean and with an unusually low bacterial count. To begin with (1) 65 percent of their milk is produced by tuberculin tested cows; 35 percent is pasteurized; next (2) their milk is quickly cooled and kept cool. The farmer chills and bottles within an hour after milking; next (3) their milk is exceptionally fresh when marketed—half of it is four hours old and half is sixteen when delivered; next (4) it is exceptionally clean and in securing cleanliness the farmers have built no expensive barns. The barns I visited were cheaply constructed and plain, but they were clean and freshly whitewashed, well ventilated, well lighted, and well drained. Such barns do not cause consumption in cows.

In 1910 Omaha had a milk-borne typhoid epidemic so severe that public sentiment justified the mayor and city council in transferring full powers for the control of milk to the health department. They passed an ordinance based on the Chicago ordinance. But passing a good ordinance, having an energetic commissioner, and backing up a good inspector is not enough to get results. The keynote of the Omaha success was publicity.

The milk was examined bacterially, the dairies were scored on the Government score card, and the public record made up of the results of this double inspection, field and laboratory, was published every month in every Omaha paper. The papers published the name, address, and score of every dairyman. Let us say that the fifth commendable quality of the Omaha milk is milk pub-

licity. As a force in getting good milk publicity outranks tuberculin testing or pasteurizing or freshness or icing because it, instead of being one force, is the means of stimulating all the forces.

The health commissioner, Dr. R. W. Connell, writes as follows:

"All the daily papers have been not only willing but anxious to publish these reports each month, which they have done free of charge, and they deserve the gratitude of every citizen of Omaha. The health department receives telephone calls almost every day of inquiry regarding the scoring and why their dairyman's score this month is lower than it was the previous or lower than some other dairy.

"The customers talk with their dairymen about their score and they know they have to correct their filthy condition and bring their score up to a good standard or their customers will leave them and go to some other dairyman. It also produces quite a rivalry among the different dairymen and they use every effort to bring their dairy up to the equal of some of their neighbors or competitors."

Further, twenty-one months ago there was not a screen on a milkhouse, there was not a drain from any milkhouse or barn, there were few barns that had ever been whitewashed, there was not a small top milking bucket, there was not a cooler for cooling milk immediately after milking, there were few who had any facilities whatsoever for washing utensils, there was not any that used lime daily about the barn, there was not one stable in ten that had proper ventilation. Now every one of these dairies have all these improvements and are using the utmost care in the washing of utensils, currying the cows, icing the milk after being bottled and in transit so that it is kept down to a temperature of 50 degrees from the time it runs over the cooler until it is delivered to the customers.

And now, Mr. Editor, would not publicity be a good thing for the milk supply of your town? And, Mrs. Consumer, would not publicity be a good thing for the milk supply for your baby? And, Mr. Milkman, would not publicity help you, if you are right, or stimulate you to get right?

—*Chicago Tribune.*

The above recently appeared in the Health Department of the *Chicago Tribune.* This department is conducted by Dr. W. A. Evans, former Health Commissioner of Chicago; it has attracted wide attention and is considered an exceedingly valuable part of the paper.

Having been somewhat familiar with the rank, foul-smelling cream served in some of Omaha's leading restaurants during recent years, I was astonished by the report of Doctor Evans and wrote Dr. G. A. Young of Omaha for further information. This is his reply:

Your letter received a few minutes ago, and I was very glad to hear from you and also to know that some one may possibly question the article that was published. I was sorry to see a man as good and as thorough and well-intentioned as I believe Doctor Evans of Chicago to be, hoodwinked to the extent that he certainly was when he visited a few dairies in this locality.

I have had nothing to do with the dairy inspection here since the fall of 1910. In July, 1909, I called Doctor Connell's attention to the filthy condition of the large Omaha creameries and he instructed me to confine my attention to the smaller dairymen, about seventy in number at that time. I thought this rather strange, but proceeded with the work, and the following summer being a hot one, I found that the smaller milk dealers had raised the price of milk from five and six cents per quart to seven and eight cents. The large creameries that I referred to had fifty-fine wagons on the street peddling and advertising pasteurized milk in 1909. In 1910 they had about forty and were looking for lost customers.

This was the time when my trouble commenced. I have, with many others, believed that there was a very close connection between the creameries and the Health Commission, at any rate the slightest complaint made to the Health officers about a small peddler's milk was magnified into a mountain and the hundreds of complaints lodged against the big creameries were ignored. The consumers, though, had tasted the milk from the inspected dairies and refused to buy the pasteurized filth.

I examined some ten gallons received along the roadside one day, and if ever a country outhouse stunk worse, I never smelled it.

About August, 1910, we had some typhoid fever and it was traced to one particular dairy, and of all the newspaper excitement incited from the Health office trying to throw the blame on the dairy inspector! Within four blocks of the dairy was located a hog ranch, 5000, more or less, hogs being fed on the city garbage. This hog ranch was permitted to locate there by an act of legislature and the present Health Commissioner lobbied for its passage for four days at the Capitol. The location of this ranch was on the old river bed. You can probably imagine the insanitary condition at any time, drainage from same entering the river about four or five blocks above one of the pumping stations.

Dead animals were hauled here in various stages of decomposition, the skins were removed by the hauler, and the carcasses fed to the hogs.

As city veterinarian I was called there to post the carcass of a cow that died so suddenly as to arouse suspicion. The weather was very hot, about 96° F., and the various colored flies that arose from the dead cow nearly furnished a shade from the sun. It takes a good deal to unsettle my stomach, but I paid the knacker to do the cutting.

The dairy being only four blocks away, what was to hinder those flies going that distance when they had surfeited themselves on the carcass? The dairy had been there twenty years, the hog ranch about three years.

Night soil had, I found out later, been surreptitiously deposited on the edge of the pasture and washed down by the rain. This dairyman's cows were sick of a disease I had bever seen before. (He also died himself.)

The stench from the hog ranch and the carcasses, of on an average of six per day, permeated the whole neighborhood to the extent that the people who lived there had to close their windows during the extreme heat and bear it as well as they could.

When the investigation was in progress to check the progress of typhoid, the health commissioners

could see typhoid germs by the billions from a little water seeping underneath the floor of the milkhouse, but when the hog ranch was visited (and the owners were notified that an official visit was to be made) everyone but the health commissioner was holding his nose.

One of the city councilmen asked the manager of the hog ranch where the drains led to and he said it went into the slough—the truth was it had no other means of escape than in the river.

The ranch is still doing business at the old stand except that then they were hauling the garbage free of charge and with their own wagons—now the city kindly hauls it for them.

During my regime as dairy inspector, several complete new barns were built. Twenty-three were remodeled, new floors, extra windows and detached milk house were installed. I also insisted on the tuberculin test being established and did away with fake pasteurizing machine. Doctor Connell forced many milkmen to purchase pasteurizers. These I found with cobwebs on them, showing that they could not possibly have been used twice daily as his ruling called for. I also called his attention to the fact that it was utterly impracticable to enforce his ruling and even if it was enforced, it did not encourage cleanliness. Milkmen were told that if they pasteurized their product all germs would thereby be destroyed, which is ridiculously untrue. It takes 190° F. to destroy all germs where manure gets in the milk, and milk heated to this temperature is unsatisfactory and won't sell.

Pasteurizing, as formerly done here, is no more. With reference to Doctor Evans' visit to some of the Omaha dairies, the owners of the ones selected for him to visit, had two days previously been informed by the present dairy inspector that a Chicago inspector was to visit them, and you can't well blame the milkmen for trying to make a good showing and to get into print.

I happened to be making the tuberculin test in several of these dairies, and was at one of them when the gentleman called. He was there not to exceed four minutes. These barns were recently whitewashed and one dairyman missed his test one day because he did not want the cows in the barn until after the Chicago inspector had been there, fearing the cows would soil the whitewash. Under the circumstances I do not blame him very much. What is the use of making a special effort to clean up and then have the pesky cows nullify that effort?

A dairyman about a quarter of a mile away and off the main road had not been notified to clean his place and consequently all of the chickens were holding high carnival in the cow barn and scratching and messing up things generally. I know whereof I speak as I was there the same day that Doctor Evans was being carefully piloted around.

I am very glad indeed to state that the general trend has been for improvement during the past three years, but the Omaha dairies are all scored too high and I consider the system or method employed by the present Dairy Inspector to be far from being thorough. The dairymen have a method of their own and know what to do to keep up their scores.

What do you think of dairies with scores 84 to 90 percent, where the milk bottles are thrust into a large container, and filled in this manner, set on the milkhouse floor, capped and then the hose turned on to wash the outside of the bottles? How can the hands avoid coming in contact with the milk when it is done in this manner?

But a whitewashed barn makes the milk clean! You *must* have that, but hands washed in the milk, what does that amount to? I again know whereof I speak.

Small-top milking pails are supposed to be used, and in one place during the recent visit of the Chicago Inspector two were being used, the other two were open pails, and the men laughingly told me how they scooted out behind the barn when the noted visitors were present to avoid being censured for using open pails. Had these men been properly educated in using closed or small-top pails they would not have treated the matter as a joke, as they evidently seemed to think it. One man was seen hurrying to curry his cows, and much to his disgust after it was done the Chicago Inspector failed to call. This is mentioned to show you the disposition among them.

I hope I have made things plain for you. If you intend to visit the Missouri Valley meeting, I will take you around and you can verify things.

G. R. YOUNG.

ECKMAN'S ALTERATIVE

Another Fraudulent Consumption Cure

Some time ago a consumption cure humbug, Tuberculozyne, was exposed in *The Journal*. Eckman's Alterative resembles Tuberculozyne in three particulars: (1) It is sold as a "consumption cure;" (2) it is exploited by a horse doctor; (3) it is a cruel fraud. It further resembles Tuberculozyne in that it is advertised by the testimonial method, but then practically all "patent medicines" are sold in the same way. The product is sold by the Eckman Manufacturing Co., Philadelphia, and is said to be the "discovery" of T. T. Eckman, a veterinarian, who first tried it on cows and later experimented on a member of his own family.

Instead of being sold on the mail-order plan, as Tuberculozyne is, Eckman's Alterative is sold through the medium of the druggists. It is heavily advertised in the daily press, the advertisements consisting, generally, of testimonials to which are attached laudatory paragraphs about the preparation with the names of the local druggists inserted. An extensive advertising campaign is being carried on and it is reported that the Eckman concern is going to spend $150,000 during 1912 in advertisements. Here are some of the claims made for this nostrum:

"A medicine made for the cure of tuberculosis. It has cured this disease again and again."

"Cures have been effected . . . . . where no intelligent care was taken of the patient, where money was scarce, good food and good cooking unusual."

"Consumptive patients need no longer dread either the fate that formerly overtook all sufferers from lung trouble, or costly and often terribly inconvenient journeys far from home to other climates or to some expensive sanatorium. Hundreds are now staying quietly at home curing themselves at no expense beyond the cost of a few bottles of medicine."

"The Sanitarium treatment has only benefited temporarily, while Eckman's Alterative has cured."

These quotations are sufficient to show that the firm uses the methods classical to "patent-medicine" fakers: that of attempting to discredit the rational scientific treatment of disease and to substitute therefor a worse than worthless nostrum.

Eckman's Alterative was analyzed in the laboratory of the American Medical Association and the chemists' report follows:

Eckman's Alterative comes in an 8-ounce bottle and is a dark brownish, turbid liquid with a strong odor of cloves. The label declares the presence of 14 percent of alcohol. Qualitative tests demonstrated the presence of alcohol, calcium, a chlorid, small amounts of vegetable extractive and traces of vegetable tissue. No other substance of a medicinal nature was detected. Quantitative examination gave the following results:

Total solids (residue at 100 C.) including 3.93 Gm. of calcium chlorid ($CaCl_2$)	6.25 Gm.
Alcohol	11.22 Gm.
Insoluble residue	0.073 Gm.
Water and undetermined, to make	100.00 Cc.

This analysis agrees in general with that made by the New Hampshire authorities who reported the presence of 3.59 percent of calcium chlorid and small quantities of powdered cloves.

Here then we have a mixture of alcohol, calcium chlorid and cloves, which every intelligent physician knows is perfectly worthless for the cure of consumption, sold at an exorbitant price—$2 for eight ounces—under the cruelly false claim that it will save the tuberculous. As has been pointed out time and again, the inherent viciousness of fraudulent consumption cures lies in the fact that they lead the sufferer to abandon or ignore those hygienic and dietetic measures which are his only hope. It is not easy, it is not always comfortable, it is frequently disagreeable to follow the treatment which experience has shown to give the only hope of success. It is much easier to continue living the life which, in so many cases, has been responsible for the consumptive's condition; merely taking at stated intervals a medicine which its manufacturers declare to be all that is necessary to bring about recovery.

Hoping against hope that in the "consumption cure" nostrum the secret has at last been wrested from nature by which the White Plague may be vanquished, the ever-optimistic consumptive sacrifices money which should go into good food, sacrifices all too precious time and, finally, life itself, and the consumptive-cure faker waxes rich in the toll of blood exacted from his credulous victims.—*Journal Am. Med. Association.*

TUBERCULOSIS FOUND IN CATTLE

At a session of the Sanitary Institute in the Council Chamber at the City Hall, Utica, N. Y., Prof. Veranus A. Moore, M.D., of Cornell University, gave a very instructive address on tuberculosis in cattle. He detailed the supposed inception of the disease and referred to the fact that it was not much spoken of in early years. In fact, it was not until about 1850 that the newspapers began speaking of it, but not to any great extent until 1870. Not so much trouble was experienced when the farmer raised his own cattle, but when he began to buy them he began to have trouble. He compared the methods of treating the disease in this and other countries. Tuberculosis in cattle is much the same as in man. They may both live for years and it not be generally noticed that they are afflicted with the trouble. The origin of the trouble is not known. Denmark claims that the infection came through thoroughbreds bought in Scotland 150 years ago. We brought it to this country in the same manner.

The traffic in cattle has been caused by the greatly increased demand for milk, as the cities have grown. It has come to be the practice of the farmer to sell the dry cattle and buy fresh in order to have continuous milk supply.

Prof. Moore said that where the tuberculosis was localized the animal could be used for beef. We get it now from the large packing houses; why should not the farmer have the same privilege? Doctor Wiley has suggested that it be officially stamped "tuberculosis, but fit for food." Prof. Moore said that if that was done the price of beef would go higher than at present by a good deal.

Referring to the tuberculin test, the speaker said that the cattle did not always respond, and farmers buying from a herd that had been tested in order to get clean cattle were surprised to discover trouble in their herd. The tuberculin and the man making the test were blamed, but the real trouble was that the limitation of the power of tuberculin has not been taken into consideration.

The address was of great interest and importance to health officers present and at its conclusion a number of questions were answered by Prof. Moore to make more clear certain points of the talk.

He advocated the physical examination of the cattle by a regularly appointed veterinarian as agent for each city.—Utica (N. Y.) *Dispatch.*

KILLS QUICKLY

Horses of all ages, grades, conditions, usages and environments are stricken seemingly with some malignant catarrhal abscess in the head near posterior nares, which kills them in from two or three hours to two, three or five days. Some swelling of posterior extremities exists in some patients. There is little or no fever, and the appetite is usually good, even up to the last moments of life. The kidneys, bowels, respiration and pulse about normal, except that some cases show weak pulse. Some, however, exhibit some colic symptoms at times. One or two that I have treated showed diarrhea. The nostrils early become streaked with a fetid, mucopurulent discharge which grows worse until death, and then in handling the cadaver, usually there is a gush of rotten matter escapes from one or both nostrils, which is something to be dreaded indeed. I treat them with stimulants, Poly-Bacterins, sulphocarbolates and nuclein solution, but am able to save only a small percentage of cases, and those are mild ones which I suppose would have recovered uninterfered with. Will the profession please contribute to this discussion. I want information on this subject.

J. W. HARBAUGH.

Corydon, Ind.

BILL AIMS A BLOW AT PATENT "CURES"

Several hundred patent medicines that are enjoying a wide sale will have their distribution prohibited or restricted, if the Richardson amendment to the Pure Food and Drug Act, now being considered by the house committee on interstate and foreign commerce, becomes law.

"Soothing sirups," "diphtheria cures," "headache remedies," and other panaceas containing cocaine, morphine, and other dangerous drugs;

"cancer cures" alleged to be infallible, and consisting of water and alcohol, "fat-reducing" creams, made of soap and water and "guaranteed to remove a pound of fat a day," and all other preparations indulging in fabulous and erroneous statements as to their curative powers will not be permitted to be shipped in interstate commerce.

—*Chicago Tribune.*

RESULTS OF THREE SURGICAL OPERATIONS

Case 1. I was called to see a Spanish jack that had gotten out of his stall and had been kicked on the left side of the lower jaw, causing a break running obliquely from the fifth to the second molar. Side of jaw was hanging down, there was a discharge of bloody, ropy, saliva; tongue protruding; no lacerations of any tissues.

Treatment: I shaped a light board to fit the lower jaw, extending from the larynx the full length of the submaxillaries; to the center of this fastened an oval piece shaped to fit the submaxillary space; to the sides, fastened pieces of binder board extending up to superior maxillary; this forming a trough in which was placed a layer of cotton; this fitting the jaw closely; over this support was fastened a light halter fitting it closely; over this was used quite a number of feet of bandage wrapped round and round over the pole and stitched in various places.

This held it securely.

This remained on for twenty-seven days, at the end of which I had a perfect union.

Life was sustained by rectal injections.

On the second day I emptied his rectum by enema, then injected one gallon new milk, six hours after one gallon corn meal gruel, alternating these injections every six hours.

After bandage was removed, fed him on thin bran mash and hay tea. As stated above, support was removed in twenty-seven days, a perfect union had taken place. I can scarcely tell where the fracture was.

Case 2. I was called to see a cow that had been tusked by a male hog on the left side just above the flank. A loop of the intestine protruding; in the intestine was a cut about four inches long; in a semi-circle. The intestine was greatly swollen and congested.

Cow was laid down and tied firmly; placed a towel against the side, thoroughly soaked in creosol compound and warm water, used bandage about four inches wide, which had been placed in warm water, wrapped around the loop of intestine; repeated this till congestion had been removed; then placed stitch, with a catgut ligature about every one-eighth inch, until twenty-one stitches had been taken; took a probe-pointed bistoury and made the opening larger; allowing bowels to slip back in proper position; thoroughly cleansed and disinfected the opening; took four stitches with narrow tape through skin and muscles; dusted parts with boracic acid and iodoform.

Cow made a nice recovery in a short time.

Case 3. I was called to see a large black gelding, weighing about thirteen hundred pounds; lying on his left side; raised his head and looked back at his side; bloated and passing small amounts of feces; expelled flatus frequently; made great effort to urinate.

Treatment: Gave the horse a large dose of chloral, which eased him.

Upon further investigation I found the bladder distended with urine and proceeded to pass the catheter, then made a rectal examination; found a calculus about the size of a hen egg but more oblong, this had worked into neck of bladder; by manipulating succeeded in working it back and with assistance passed the catheter and a large amount of urine was passed. After withdrawing catheter the calculus fell back into same position as before. I informed the owner what I had found.

Horse seemed still to be in slight pain.

Used hypodermically, morphine, gr. 11, atropine, gr. 1-8. Owner stated horse had been taking colicky pains for the last two or three weeks. Advised the owner to have him operated on.

Horse was led about ten miles to my barn; arriving about one o'clock. Operated about three; washed and disinfected seat of operation; used quinine and urea hydrochloride for an anesthetic; thoroughly anesthetizing the parts; made the incision just below the anus through the urethra about two and one-half inches long and removed a calculus weighing eight and one-half ounces; used a catgut ligature and made four stitches through the urethra; then made four stitches through the skin and muscles; dusted parts thoroughly with boracic acid and iodoform. Treated this two or three times a day. In about two weeks horse was well and doing its usual work.

W. G. HASSEL.

Grayville, Ill.

I RECEIVED my May issue of VETERINARY MEDICINE today and wish to express my appreciation of its value to me.

It is very noticeable that as it improves in size, length, breadth and thickness, it improves in merit.

G. E. CORWIN, D.V.S.

Canaan, Conn.

ON LIVE STOCK DISEASES

Mississippi's Agricultural Commission Has Bulletin for Distribution

Commissioner of Agriculture Blakeslee, ex-officio chairman of the Mississippi Live Stock Sanitary Board, has just received from the printers a pamphlet containing in convenient and compact form the laws, rules and regulations governing the extermination of contagious diseases of live stock in Mississippi. This is for free distribution and may be had for the asking.

Among the features of this work is a map of the state, so arranged that the reader may tell at a glance just which counties have been cleared, which have been partially cleared, those in which boards of supervisors have provided funds for start, and those which have taken no steps for the eradication of ticks or for coping with stock diseases.

—*Memphis* (Tenn.) *Com. Appeal.*

VETERINARIAN FOUND DEAD

Boys Playing Find Corpse of Dr. D. F. Scott at His Camp

Some boys playing near the Missouri, Kansas & Texas Railway bridge over the Leon river between Temple and Belton, Texas, May 31, stumbled upon the camp of D. F. Scott, a veterinary surgeon of

Temple, and found the owner of the camp lying cold in death. Decedent was aged 68 years and for the last three years alternated his residence between Temple and Holland. About a week before he was found dead he had engaged a team, saying he was going to camp on the river for awhile. He had been dead about twelve hours when found. Justice Bassell of Belton conducted an inquest and a verdict was returned that death ensued from natural causes.—*San Antonio* (Texas) *Express.*

MISHAP ON BOULEVARD

Dr. William G. Black, a veterinarian, met with a mishap recently on the Deep Creek boulevard, when his auto ran into a ditch and was overturned. Fortunately, the doctor was not harmed in the accident, nor was the machine damaged to any great extent.—*Norfolk* (Va.) *Pilot.*

VETERINARIAN KILLED BY HORSE

Dr. E. J. McGhee, a veterinarian of Platte, was killed recently when a horse reared up and fell over on him. An artery was cut and the doctor bled to death in a very few moments.

—*Sioux Falls* (S. D.) *Press.*

SERUM ROUTS CATTLE PLAGUE

Dr. Wilhelm Grugel of the University of Rostock Hygienic Institute, Germany, by his invention of the inoculation method against the foot-and-mouth disease, has given great hopes to German farmers, who suffered last year the loss of $50,000,000 through a terrible cattle epizootic. After having discovered the bacillus exciting the disease Dr. Grugel succeeded in producing a serum that creates immunity.

The inventor informs the correspondent of *The Daily News* that his experiments will be continued in order to ascertain how long the immunity lasts. The cost of the inoculation is only 75 cents a head.

Secretary Atwood of the American Association of Trade and Commerce in Berlin tells the correspondent of *The Daily News* that the new remedy will prove enormously important, even for the United States.

"We suffer considerably less than Germany from claw sickness," he says. "But even our farmers lose heavily. Besides, the German government has put forward its fear of the disease as one reason, among others, for shutting out American cattle from the fatherland's markets. The discovery may, therefore, prove beneficial to German-American commercial relations."—*Chicago Daily News.*

["Read the *News* for all the news," even for the news that our farmers lose heavily because of foot-and-mouth disease, which isn't news at all, but misinformation.—ED.]

A NEW DOG LAW

In Pennsylvania an act which became effective June 11, 1912, requires that country as well as city dogs shall be taxed and must wear tags stating that the tax has been paid.

$5

Brings Oliver Typewriter

Send $5 for The Oliver Typewriter—the machine will come a-flying. The newest Model—No. 5—the regular $100 machine—with no extra charge for Printype.

For the price of a good *fountain pen* you secure the World's Greatest Typewriter. You can pay the balance at the rate of 17 cents per day.

This irresistible "$5 offer" is sweeping everything before it. The era of *universal typewriting* is coming. The triumph of the typewriter over primitive *pen-and-ink* has been brought about by the same machine that introduced *visible writing*.

The OLIVER Typewriter

The Standard Visible Writer

This is the typewriter whose high efficiency has made it the choice of the greatest firms and corporations. It is the simplest of all standard typewriters, yet the *swiftest* and by far the most *versatile*. The moving parts work freely in a solid metal framework, making the machine so *strong* that the hardest usage has no effect upon it.

No Extra Charge for "Printype"

Most people prefer to have the machine equipped to write in Printype. This beautiful type is obtainable only on The Oliver Typewriter.

It is the greatest *style* improvement ever evolved for typewriters—the most easily read type in existence—the type which conforms to that in universal use on the world's printing presses!

Win Success With the Oliver!

The Oliver Typewriter aids success-seekers in a multitude of ways. The real life stories of achievement that center around it would fill *volumes*.

No matter what your work may be—in office, store, shop or home—The Oliver Typewriter will prove itself a great convenience and an actual *money-maker*.

It stands for *order* and *system* and *success*. It is the visible evidence of the *progressiveness* of its owner. Young people with brains, ambition and Oliver Typewriters are succeeding *everywhere*. Can you afford to let $5 stand between you and *success?*

Send for Special Circular and Art Catalog

Full details regarding the Oliver Easy-Purchase-Plan, beautiful catalog and a specimen letter written in Printype will be sent you on request.

Let this $5 offer awaken you to your *need* of The Oliver Typewriter and the ease with which you may *own* it.

Remember—$5 only and *on comes The Oliver Typewriter!*

Sales Department (206)

The Oliver Typewriter Company

159-167 Oliver Typewriter Bldg. CHICAGO, ILL